JVC

IP Camera

VN-V686U API GUIDE

This document provides a description of protocols and API of VN-V686.
Refer Readme file in the CD-ROM for updated information.

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Updates

Version	Date	Updates
1.00Beta	2007/12/11	Beta release.

Custom Application Software Development Guide

VN-V686 can be used from a custom application software by utilizing the API and protocols for VN-V686. The following operations are possible.

- Getting JPEG from VN-V686.
- Getting MPEG-4 from VN-V686.
- Getting Alarm from VN-V686.
- Getting or changing VN-V686 settings.
- Pan/Tilt/Zoom/Focus operation of VN-V686.
- Sending Multicast from VN-V686.
- Customization of VN-V686's built-in viewer.

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1. Getting JPEG from VN-V686 via HTTP

1.1. Basic Procedures

1) The client establishes a TCP connection to port number 80.

2) The client sends out API.

Example

```
GET /api/video?encode=jpeg&framerate=30&ptz_info=off HTTP/1.1<CRLF>
Host: 192.168.0.2<CRLF><CRLF>
```

Note <CRLF> denotes the line feed code (0x0D, 0x0A).

3) VN-V686 returns HTTP response.

Example

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Length: 27616<CRLF>
Content-type: image/jpeg<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-V686 Network Camera<CRLF>
x-vnv25_response:
encode=jpeg&framerate=30&framesize=vga&ptz_info=off<CRLF><CRLF>
```

4) VN-V686 sends out JPEG data after returning HTTP response.

When ptz_info=off is specified, JPEG files will be sent out continuously after HTTP Response are as follows.

HTTP Response
JPEG (No. 1)
JPEG (No. 2)
,,,

When ptz_info=on is specified, boundary, pan/tilt/zoom information and JPEG file will be sent out continuously after HTTP Response are as follows.

HTTP Response
boundary
pan/tilt/zoom information
JPEG (No. 1)
boundary
pan/tilt/zoom information
JPEG (No. 2)
,,,

Example of Booundary and pan/tilt/zoom information:

--foo<CRLF>

Content-Type: image/jpeg<CRLF>

Content-Length: 31200<CRLF>

X-Puls-Pan: 0<CRLF>

X-Puls-Tilt: 0<CRLF>

X-Posi-Zoom: 0<CRLF><CRLF>

Range of X-Puls-Pan is from 0 to 35999.

Range of X-Puls-Tilt is from 0 to 19000. 0 corresponds to -5 degrees and 19000 corresponds to 185 degrees. 500 and 18500 mean horizontal.

Range of X-Posi-Zoom is from 0 to 9999.

Details of JPEG file format is explained later.

5) When the client wants to stop current JPEG transmission, the client disconnects TCP80.

VN-V686 does not accept further API via current TCP that is used for JPEG transmission. To change parameter, disconnect current TCP to stop the JPEG transmission, connect new TCP, and send API with new parameter.

1.2. API Format

Structure

GET	space	API	space	HTTP/1.1	0x0D 0x0A
Host:	space	IP Address of VN-V686	0x0D 0x0A 0x0D 0x0A		

Unlike APIs for getting/setting parameters, Accept line is not required. Basic authentication is also not necessary.

Example

```
GET /api/video?encode=jpeg&framerate=30&ptz_info=off HTTP/1.1<CRLF>
Host: 192.168.0.2<CRLF><CRLF>
```

Parameter value is indicated using =. Do not insert space before and after =.

Example framerate=1

Parameter Description

encode For specifying compression format. For example, specify as encode=jpeg to get JPEG.

framerate For specifying the frame rate. For example, specify as framerate=5 to get at 5 fps. Specify as framerate=-5 to get at 1/5 fps, or in other words, 1 frame in 5 seconds. Selection range is as follows.

30, 25, 15, 10, 7.5, 6, 5, 3, 2, 1, 0, -2, -3, -5, -10, -15, -20, -30, -60

When the parameter is specified as framerate=0, VN-V686 sends 1 frame of JPEG data, and disconnect the TCP connection.

ptz_info To add pan/tilt/zoom information before JPEG data. Specify on or off. Even if ptz_info=off, pan/tilt/zoom information is stored in JPEG comment segemnt.

1.3. Response

When API is successfully received

VN-V686 will return 200 OK. Content-length indicates file size of first JPEG in bytes. The x-vnv686_response line indicates actual parameter.

Example

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Length: 27616<CRLF>
Content-type: image/jpeg<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-V686 Network Camera<CRLF>
```

x-vnv686_response:

encode=jpeg&framerate=30&framesize=vga&ptz_info=off<CRLF><CRLF>

1.4. Restrictions

Access restriction

VN-V686 has access restriction feature that enables to deny access from a specific IP address. If JPEG is requested from the IP address of access restriction, VN-V686 disconnects the TCP connection after API is sent.

Restriction by maximum bitrate of VN-V686

The maximum bitrate of VN-V686 is about 20 Mbps.

Number of clients

The maximum number of clients that can get JPEG stream depends on encode settings and requests from client. Refer the instruction manual for detailed information.

1.5. JPEG File Format Sent Out by VN-V686

JPEG file from VN-V686 is JFIF compliant and consist of the following.

FFD8	Start Code
FFE0	Application Segment
FFFE	Comment Segment 1
FFFE	Comment Segment 2 (reserved)
FFC4	DHT Huffman Table
FFDB	DQT Quantization Table
FFDD	DRI Restart Interval
FFC0	SOF Frame Information
FFDA	Data Start Segment
FFD9	End Code

The following information is stored in the comment segment 1. Each item has a fixed length.

Item	Size	Example	Note
Version Information	9	JVC V1.0	Indicates the version of information stored in the comment segment.
File Size	18	size = 123456	Indicates JPEG size in bytes.
Width	13	width = 640	Width of JPEG.
Height	14	height = 480	Height of JPEG.
Model Name	18	type = VN-V686U	Name of model that created the JPEG.
(reserved)	12	reverse = 0	(reserved)
Time Stamp	70	Timestamp =	Indicates the time when the JPEG is created. This is made

		20071014130509123UTC	up of the year/month/day, hour/minute/second, millisecond and timezone code.
(reserved)	13	alarm = 00000000	(reserved)
Camera ID	50	camera = input01	Stores camera information set at VN-V686.
Motion Detect Setting	11	motion = 1	Specified as 1 when the motion detect is ON.
Motion Detect Result	7	md = 1	Specified as 1 if motion is detected at the time when JPEG is created.
Pan position	13	pan = 123.45	Indicates pan position in degrees from 0.00 to 359.99.
Tilt position	14	Tilt = 123.45	Indicates tilt position in degrees from 0.00 to 190.00. 0.00 corresponds to -5 degrees and 190.00 corresponds to 185 degrees. 5.00 and 185.00 mean horizontal.
Zoom position	13	zoom = 12.34	Indicates zoom position from 0.00 to 99.99. EZoom starts from about 90.89.
Preset Posision Number	15	position = 99	Indicates preset position number after moving to preset position. In other cases, position = NA.
Stabilizer status	15	stabilizer = 0	Indicates status of stabilizer. 1 means that stabilizer is on.
Fan status	8	fan = 0	Indicates status of fan. 1 means error.

Item names and values, excluding the version information that does not include =, are stored in the following format.

name	space	=	space	value	(stuffed with 0x00)

fixed length for each item

Example: When width=640, the 13-byte area will be written as follows.

w	i	d	t	h		=		6	4	0	0x00	0x00

2. Getting MPEG-4 from VN-V686 via HTTP

2.1. Basic Procedures

1) The client establishes a TCP connection to port number 80.

2) The client sends out API.

Example

```
GET /api/video?encode=mpeg4 HTTP/1.1<CRLF>
Host: 192.168.0.2<CRLF><CRLF>
```

Note <CRLF> denotes the line feed code (0x0D, 0x0A).

3) VN-V686 returns HTTP response.

Example

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Type: video/mp4v-es<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-V686 Network Camera<CRLF>
x-vnv686_response:
encode=mpeg4&framerate=15&framesize=vga&ptz_info=off<CRLF><CRLF>
```

4) VN-V686 sends out MPEG-4 data after returning HTTP response.

HTTP Response and MPEG-4 stream sent out by VN-V686 are as follows.

HTTP Response
VOP of MPEG-4 (No. 1)
VOP of MPEG-4 (No. 2)
,,,

When ptz_info=on is specified, boundary, pan/tilt/zoom information and MPEG-4 VOP will be sent out continuously after HTTP Response are as follows.

HTTP Response
boundary
pan/tilt/zoom information
MPEG-4 VOP (No. 1)
boundary
pan/tilt/zoom information
MPEG-4 VOP (No. 2)
,,,

Example of Booundary and pan/tilt/zoom information:

--foo<CRLF>

Content-Type: image/jpeg<CRLF>

Content-Length: 5914<CRLF>

X-Puls-Pan: 0<CRLF>

X-Puls-Tilt: 0<CRLF>

X-Posi-Zoom: 0<CRLF><CRLF>

Range of X-Puls-Pan is from 0 to 35999.

Range of X-Puls-Tilt is from 0 to 19000. 0 corresponds to -5 degrees and 19000 corresponds to 185 degrees. 500 and 18500 mean horizontal.

Range of X-Posi-Zoom is from 0 to 9999.

Details of MPEG-4 stream is explained later.

5) When the client wants to stop current MPEG-4 transmission, the client disconnects TCP80.

VN-V686 does not accept further API via current TCP that is used for JPEG transmission. To change parameter, disconnect current TCP to stop the MPEG-4 transmission, connect new TCP, and send API with new parameter.

2.2. API Format

Structure

GET	space	API	space	HTTP/1.1	0x0D 0x0A
Host:	space	IP Address of VN-V686	0x0D 0x0A 0x0D 0x0A		

Unlike APIs for getting/setting parameters, Accept line is not required. Basic authentication is also not necessary.

Example

GET /api/video?encode=mpeg4&ptz_info=off HTTP/1.1<CRLF>

Host: 192.168.0.2<CRLF><CRLF>

Parameter value is indicated using =. Do not insert space before and after =.

Example encode=mpeg4

Parameter Description

encode For specifying compression format. For example, specify as encode=mpeg4 to get MPEG-4.

ptz_info To add pan/tilt/zoom information before MPEG-4 VOP data. Specify on or off. Even if ptz_info=off, pan/tilt/zoom information is stored in JPEG comment segemnt.

2.3. Response

When API is successfully received

VN-V686 will return 200 OK. The x-vnv686_response line indicates actual parameter.

Example

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Type: video/mp4v-es<CRLF>
Date: Tue, 02 Oct 2007 07:33:12 GMT<CRLF>
Server: JVC VN-V686 Network Camera<CRLF>
x-vnv686_response:
encode=mpeg4&framerate=30&framesize=vga&ptz_info=off<CRLF><CRLF>
```

MPEG-4 framerate can be changed by Web page or API. When MPEG-4 framerate is changed, the framerate of current stream is changed also.

2.4. Restrictions

Access restriction

VN-V686 has access restriction feature that enables to deny access from a specific IP address. If MPEG-4 is requested from the IP address of access restriction, VN-V686 disconnects the TCP connection after API is sent.

Restriction by maximum bitrate of VN-V686

The maximum bitrate of VN-V686 is about 20 Mbps.

Number of clients

The maximum number of clients that can get MPEG-4 stream depends on encode settings and JPEG clients. Refer the instruction manual for detailed information.

2. MPEG-4 Stream Format Sent Out by VN-V686

MPEG-4 stream from VN-V686 is MPEG-4 Part 2(ISO/IEC 14496-2) compliant, level 3 of simple profile. It is a sequence of I-VOPs, or I-VOPs and P-VOPs.

I-VOP: Intra frame compressed data

P-VOP: Inter frame compressed data with previous frame

Ratio of I-VOP and P-VOP depends on I-Frame interval setting. Encode page of Web has the setting.

First VOP can be I-VOP or P-VOP. If client want to decode from I-VOP, please skip P-VOP and wait first I-VOP.

Example of MPEG-4 stream

HTTP Response
P-VOP
P-VOP
P-VOP
VOL
I-VOP
P-VOP

There are VOL, Userdata1, GOV and Userdata2 before each I-VOP.

Data Structure before I-VOP

Item	Note
VOL	VOL of MPEG-4 Video
Userdata1	Reserved
GOV	GOV of MPEG-4 Video
Userdata2	Userdata

Data Structure of Userdata2

Item	Example	Note
Start Code	0x000001B2	Start code of userdata in MPEG-4 Video
Product Name	type = VN-V686	Product Name
Timestamp	Timestamp = 20070319161455123UTC	Year, Month, Day, Hour, Minute, Second, Millisedond, and Time zone
Camera ID	camera = Camera01	Camera ID that user can define
Preset Position Number	position = 0	Indicates preset position number after moving to preset position. In other cases, position = NA.
Fan status	fan = 0	Indicates status of fan. 1 means error.

3. API to Search VN-V686

VN-V686 in LAN can be searched by broadcast packet that includes this API.

Search VN-V686 in LAN

Protocol Send udp packet with following text in UDP payload to destination port number 80. Source port number can be any value.

system.id<CRLF>

Response VN-V686 that received this packet sends udp packet to the source port number of the search packet. UDP payload of response packet has model name, IP address, and subnet mask. VN-V686 waits 0-0.7 second before sending response to avoid too many responses are sent in short period from many VN-V686s.

Response Example **system.id=VN-V686U(192.168.0.2/24)&200 OK<CRLF>**

4. Getting Alarm from VN-V686

4.1. Procedure

1) The client establishes a TCP connection to port number 32040.

2) When motion is detected from the video image of VN-V686, or when there are changes to the alarm input (make or break), VN-V686 will send out alarm information in the following format. The first 2 lines indicate the current alarm input status (make or break). The following 1 line indicates whether motion has been detected.

peripheral.input_pin.pin(1).status=break<CRLF>
peripheral.input_pin.pin(2).status=break<CRLF>
video.input(1).detection(motion).status=on<CRLF>

3) The client can disconnect TCP32040 to end the alarm acquisition.

4.2. Restrictions

Maximum number of clients

The maximum number of clients that may acquire alarm is 10. When a 11th client establishes TCP connection to port number 32040, VN-V686 disconnects the TCP connection.

Additionally, VN-V686 will also check whether the TCP connection is maintained at regular intervals. VN-V686 will disconnect the TCP connection if syn exchange is not performed in 10 minutes.

Note: API for getting alarm is not restricted by the access restriction function.

5. Using API that Requires Basic Authentication

Basic authentication is required for APIs which are explained in Section 6. This section provides general explanation of those APIs.

5.1. Procedure

1) The client establishes a TCP connection to port number 80.

2) The client sends API.

API has following structure.

GET	space	API Characters	space	HTTP/1.1	0x0D 0x0A
Accept:	space	text/plain (or text/html)	0x0D 0x0A		
Host:	space	IP Address of VN-V686	0x0D 0x0A		
Authorization: Basic	space	Encoded User Name and Password	0x0D 0x0A 0x0D 0x0A		

The following is an example of API for Getting subnet mask of VN-V686.

Example

```
GET /api/param?network.interface.subnetmask HTTP/1.1<CRLF>
Accept: text/plain<CRLF>
Host: 192.168.0.2<CRLF>
Authorization: Basic YWRtaW46dm4tdjY4Ng==<CRLF><CRLF>
```

Specify the response format by Accept line. Plain text response is returned when this is specified as text/plain. HTML response is returned when text/html is specified. HTML response is returned when Accept is not specified.

These APIs for getting/setting parameters are protected by basic authentication. Authorization line needs to include encoded username and password. There are 3 types of usernames, namely admin, operator and user. Available APIs are different for each username. Join the user name and the password using a colon, Base64 encode this character string and enter this in the Authorization line.

For example, when

User name admin

Password vn-v686

then the character string joining the user name and the password with a colon is:

admin:vn-v686

Base64 encoding of this string yields YWRtaW46dm4tdjY4Ng==. Enter this in the Authorization line. Default password for each username is vn-v686.

3) VN-V686 returns a response to the client. In the following example, current subnet mask is 255.0.0.0. In addition, 255.0.0.0 is followed by & and 200 OK, indicating that getting parameter is successful.

Example

```
HTTP/1.1 200 OK<CRLF>
Connection: close<CRLF>
Content-Length: 80<CRLF>
Content-type: text/plain<CRLF>
Date: Fri, 13 MAY 2005 07:33:12 GMT<CRLF>
Server: JVC VN-V686 API Server<CRLF>
network.interface.subnetmask=255.0.0.0&200 OK<CRLF>
```

4) The client disconnects TCP80 to end the use of API.

Note: APIs for getting/setting parameters are not restricted by the access restriction function.

6. API for Getting/Changing Parameters of VN-V686

This section provides description of APIs for getting/changing parameters of VN-V686. Make use of the API explained in this section in the way as mentioned in Section 5

.

6.1. General

(1) Getting parameter

● Specify API in GET line according to the format below when getting a parameter from VN-V686.

/api/param?ParamA.ParamB.ParamC

The upper limit of this character string is 1024 bytes.

● When acquisition is successfully completed, values will be shown in the body of HTTP response, followed by "&200 OK" message.

Example:

ParamA.ParamB.ParamC=Data&200 OK

When an error occurs, an error code will be returned instead of indicating a value in the body of HTTP response.

Example:

ParamA.ParamB.ParamC&401 Unauthorized

(2) Setting parameter

● Specify API in GET line according to the format below when setting a parameter for VN-V686.

`/api/param?ParamA.ParamB.ParamC=Data`

Parameter values are indicated using =. Do not insert space before and after =.

The upper limit of this character string is 1024 bytes.

● Response will be in the following format.

`ParamA.ParamB.ParamC&200 OK`

An error code will be returned when setting is not properly performed. Example:

`ParamA.ParamB.ParamC&401 Unauthorized`

6.2. Camera

These APIs are related to camera settings. Same functions are shown on the Camera page of the WEB setting page and PTZ Controller of built-in viewer. Refer to the instruction manual for details on the Camera page and PTZ Controller.

Saving Changes of Camera Settings

Format **`/api/param?canera.status=data`**

Example **`/api/param?canera.status=save`**

Example of response **`canera.status&200 OK`**

Interpretation Save or cancel changes to camera settings. Specify save or restore. By status=save, changes to camera settings are saved. If not saved, the changes are restored by power off of VN-V686. By status=restore, changes to camera settings are restored.

Allowed users admin, operator

Getting Camera ID stored in JPEG from VN-V686

Format **`/api/param?camera.id`**

Example of response **`camera.id=VN-V686&200 OK`**

Response example when setting field is left blank **`camera.id=&200 OK`**

Interpretation Acquire Camera ID comment. This comment is stored in comment segment of JPEG. The Camera ID is used as sender's display name of alarm mail. If you want to set sender's mail address, see "Setting Sender Mail Address for VN-V686".

Example of response **`camera.id=Camera01&200 OK`**

Sender Camera01<somename@somecompany.com>

Allowed users admin, operator, user

Setting Camera ID in JPEG from VN-V686

Format `/api/param?camera.id=data`

Example `/api/param?camera.id=Camera01`

Example when setting as blank `/api/param?camera.id=%00`

Example of response `camera.id&202 Accepted(camera.status=save)`

Interpretation Change the camera ID stored in comment segment of JPEG. Maximum size is 40 bytes.

To set as blank, specify as %00(0x25, 0x30, 0x30).

To use space, specify as %20(0x25, 0x32, 0x30). If you want to set "Comment In JPEG" for example, specify as follows. `/api/param?camera.id=Comment%20In%20JPEG`

The Camera ID is used as sender's display name of alarm mail. If you want to set sender's mail address, see "Setting Sender Mail Address for VN-V686".

Example of setting `/api/param?camera.id=Camera01`

Sender Camera01<somename@somecompany.com>

The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Monitor Type from VN-V686

Format `/api/param?camera.image.monitortype`

Example of response `camera.image.monitortype=lcd1&200 OK`

Interpretation Acquire the monitor type setting. Value is custome, lcd1, lcd2 or crt. When lcd1, lcd2 or crt is set, enhance band setting and gamma setting are ignored.

Allowed users admin, operator, user

Setting Monitor Type for VN-V686

Format `/api/param?camera.image.monitortype=data`

Example of setting a value `/api/param?image.monitortype=crt`

Example of response `camera.image.monitortype&202 Accepted(camera.status=save)`

Interpretation Change the monitor type setting. Specify custome, lcd1, lcd2 or crt. Selecting lcd1 or lcd2 can improve image on LCD display. Selecting crt can improve image on CRT monitor. When lcd1, lcd2 or crt is set, enhance band setting and gamma setting are ignored. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Black level from VN-V686

Format `/api/param?camera.image.pedestal`

Example of response `camera.image.pedestal=50&200 OK`

Interpretation Acquire black level setting. Range of pedestal is between 0 to 100, and it is mapped to 3 internal levels. The larger the value, the brighter will be the black.

Allowed users admin, operator, user

Setting Black level for VN-V686

Format `/api/param?camera.image.pedestal=data`

Example of setting a value `/api/param?camera.image.pedestal=50`

Example of 1 step change `/api/param?camera.image.pedestal=+`

Example of response `camera.image.pedestal&202 Accepted(camera.status=save)`

Interpretation Change pedestal setting. Specify 0 to 100, "+" or "-". The value is mapped to 3 internal levels. It becomes brighter 1 step by specifying "+", darker 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Gamma from VN-V686

Format `/api/param?camera.image.gamma`

Example of response `camera.image.gamma=0.45&200 OK`

Interpretation Acquire gamma setting. Value of gamma is 1, 0.55, 0.5, 0.45 or active.
When lcd1, lcd2 or crt is set to monitor type, gamma setting is ignored.

Allowed users admin, operator, user

Setting Gamma for VN-V686

Format `/api/param?camera.image.gamma=data`

Example of setting a value `/api/param?camera.image.gamma=0.45`

Example of 1 step change `/api/param?camera.image.gamma=+`

Example of response `camera.image.gamma&202 Accepted(camera.status=save)`

Interpretation Change gamma setting. Specify 1, 0.55, 0.5, 0.45 or active. 1 or 0.55 will show better image quality when LCD monitor is used. 0.45 will show better image quality when CRT monitor is used. "active" will change gamma dynamically according to image brightness. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.
When lcd1, lcd2 or crt is set to monitor type, gamma setting is ignored.

Allowed users admin, operator

Getting Active Gamma Level from VN-V686

Format `/api/param?camera.image.gamma.activelevel`

Example of response `camera.image.gamma.activelevel=0&200 OK`

Interpretation Acquire active gamma level setting. Value of active gamma level is from 0 to 100, and 11 steps internally. Thie setting is valid when gamma setting is ″active″.

Allowed users admin, operator, user

Setting Active Gamma Level for VN-V686

Format `/api/param?camera.image.gamma.activelevel=data`

Example of response `camera.image.gamma.activelevel&202`
`Accepted(camera.status=save)`

Interpretation Change active gamma level setting. Specify from 0 to 100. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot. Thie setting is valid when gamma setting is ″active″.

Allowed users admin, operator

Getting Enhance Band from VN-V686

Format `/api/param?camera.image.enhance.band`

Example of response `camera.image.enhance.band=high&200 OK`

Interpretation Acquire enhance band setting. Value of enhance band is high or low.

When lcd1, lcd2 or crt is set to monitor type, enhance band setting is ignored.

Allowed users admin, operator, user

Setting Enhance Band for VN-V686

Format `/api/param?camera.image.enhance.band=data`

Example of setting a value `/api/param?camera.image.enhance.band=low`

Example of response `camera.image.enhance.band&202 Accepted(camera.status=save)`

Interpretation Change enhance band setting. Specify high or low. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

When lcd1, lcd2 or crt is set to monitor type, enhance band setting is ignored.

Allowed users admin, operator

Getting Enhance from VN-V686

Format `/api/param?camera.image.enhance`

Example of response `camera.image.enhance=50&200 OK`

Interpretation Acquire enhance setting. Range of enhance is between 0 to 100, and it is mapped to 11 internal

levels. The larger the value, the sharper will be the image.

Allowed users admin, operator, user

Setting Enhance for VN-V686

Format `/api/param?camera.image.enhance=data`

Example of setting a value `/api/param?camera.image.enhance=50`

Example of 1 step change `/api/param?camera.image.enhance=+`

Example of response `camera.image.enhance&202 Accepted(camera.status=save)`

Interpretation Change enhance setting. Specify 0 to 100, "+" or "-". The value is mapped to 11 internal levels. It becomes sharper 1 step by specifying "+", softer 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Color Level from VN-V686

Format `/api/param?camera.image.color`

Example of response `camera.image.color=50&200 OK`

Interpretation Acquire color level value. Range of color level is between 0 to 100. The value is mapped to 11 internal levels. The larger the value, the stronger will be the color.

Allowed users admin, operator, user

Setting Color Level for VN-V686

Format `/api/param?camera.image.color=data`

Example of setting a value `/api/param?camera.image.color=50`

Example of 1 step change `/api/param?camera.image.color=+`

Example of response

`camera.image.color&202 Accepted(camera.status=save)`

Interpretation Change color level value. Specify 0 to 100, "+" or "-". The value is mapped to 11 internal levels. The larger the value, the stronger will be the color. It becomes stronger 1 step by specifying "+", softer 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Stabilizer from VN-V686

Format `/api/param?camera.image.stabilizer`

Example of response `camera.image.stabilizer=on&200 OK`

Interpretation Acquire stabilizer setting. "on" or "off" is returned.

Allowed users admin, operator, user

Setting Stabilizer for VN-V686

Format `/api/param?camera.image.stabilizer=data`

Example of setting `/api/param?camera.image.stabilizer=on`

Example of response

```
camera.image.stabilizer&202 Accepted(camera.status=save)
```

Interpretation Change stabilizer setting. Specify "on" or "off". When stabilizer is on, image is zoomed (x 1.3) by EZoom. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Stabilizer Level from VN-V686

Format `/api/param?camera.image.stabilizer.level`

Example of response `camera.image.stabilizer.level=100&200 OK`

Interpretation Acquire stabilizer level. Value from 0 to 100 is returned. The level is 3 steps internally.

Allowed users admin, operator, user

Setting Stabilizer Level for VN-V686

Format `/api/param?camera.image.stabilizer.level=data`

Example of setting `/api/param?camera.image.stabilizer.level=0`

Example of setting to strengthen `/api/param?camera.image.stabilizer.level=+`

Example of response

```
camera.image.stabilizer.level&202 Accepted(camera.status=save)
```

Interpretation Change stabilizer level setting. Specify from 0 to 100, "+" or "-". "+" or "-" changes the level 1 step. The level is 3 steps internally. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting DNR from VN-V686

Format `/api/param?camera.image.dnr`

Example of response `camera.image.dnr=on&200 OK`

Interpretation Acquire DNR (Digital Noise Reduction) setting. "on" or "off" is returned. DNR improves noise in dark image. DNR is valid when AGC is autoM or autoH.

Allowed users admin, operator, user

Setting DNR for VN-V686

Format `/api/param?camera.image.dnr=data`

Example of setting `/api/param?camera.image.dnr=on`

Example of response

```
camera.image.dnr&202 Accepted(camera.status=save)
```

Interpretation Change DNR setting. Specify "on" or "off". DNR improves noise in dark image. DNR is valid when AGC is autoM or autoH. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting AGC from VN-V686

Format `/api/param?camera.image.brightness`

Example of response `camera.image.brightnesss=autoL&200 OK`

Interpretation Acquire AGC setting. "manual", "autoL", "autoM" or "autoH" is returned.

Allowed users admin, operator, user

Setting AGC for VN-V686

Format `/api/param?camera.image.brightness=data`

Example `/api/param?camera.image.brightness=auto`

Example of response `camera.image.brightness&202 Accepted(camera.status=save)`

Interpretation Change AGC setting. Specify "manual", "autoL", "autoM" or "autoH". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Limit of Sense Up from VN-V686

Format `/api/param?camera.image.senseup_limit`

Example of response `camera.image.senseup_limit=0&200 OK`

Interpretation Acquire limit of sense up. 0, 2, 4, 8, 16, 32, 64 or 128 is returned. 0 means sense up is disabled. Other numbers mean frame number of sense up.

Allowed users admin, operator, user

Setting Limit of Sense Up for VN-V686

Format `/api/param?camera.image.senseup_limit=data`

Example `/api/param?camera.image.senseup_limit=4`

Example of response `camera.image.senseup_limit&202 Accepted(camera.status=save)`

Interpretation Change limit of sense up. Specify 0, 2, 4, 8, 16, 32, 64, 128, "+" or "-". 0 means sense up is

disabled. It becomes bigger 1 step by specifying "+", smaller 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Sense up works when shutter speed is 1/60 or 1/100.

Allowed users admin, operator

Getting ALC priority from VN-V686

Format `/api/param?camera.auto_exposure.priority`

Example of response `camera.auto_exposure.priority=motion&200 OK`

Interpretation Acquire ALC priority. ALC priority decides what is used first for auto exposure. "motion" or "quality" is returned. In case of "motion", AGC is used before using sense up. In case of "quality", sense up is used before using AGC.

Allowed users admin, operator, user

Setting ALC priority for VN-V686

Format `/api/param?camera.auto_exposure.priority=data`

Example `/api/param?camera.auto_exposure.priority=quality`

Example of response `camera.auto_exposure.priority&202`
`Accepted(camera.status=save)`

Interpretation Change ALC priority. ALC priority decides what is used first for auto exposure. Specify "motion" or "quality". In case of "motion", AGC is used before using sense up. In case of "quality", sense up is used before using AGC. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Shutter Speed from VN-V686

Format `/api/param?camera.shutter`

Example of response `camera.shutter=60&200 OK`

Interpretation Acquire shutter speed setting. 60, 100, 250, 500, 1000, 2000, 4000, or 10000 is returned. For example, 60 means shutter speed 1/60.

Allowed users admin, operator, user

Setting Shutter Speed for VN-V686

Format `/api/param?camera.shutter=data`

Example of setting a value `/api/param?camera.shutter=60`

Example of 1 step change `/api/param?camera.shutter=+`

Example of response `camera.shutter&202 Accepted(camera.status=save)`

Interpretation Change shutter speed setting. Specify 60, 100, 250, 500, 1000, 2000, 4000, 10000, "+" or "-". To set 1/60 for example, specify 60. It becomes shorter 1 step by specifying "+", longer 1 step by specifying "-". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.
To set from 250 to 10000, sense up setting must be 0.

Allowed users admin, operator

Getting B&W Mode from VN-V686

Format `/api/param?camera.image.true_daynight`

Example of response `camera.image.true_daynight=autoM&200 OK`

Interpretation Acquire B&W mode. "color", "bw", "autoL", "autoM" or "autoH" is returned.

Allowed users admin, operator, user

Setting B&W Mode for VN-V686

Format `/api/param?camera.image.true_daynight=data`

Example `/api/param?camera.image.true_daynight=autoM`

Example of response

```
camera.image.true_daynight&202 Accepted(camera.status=save)
```

Interpretation Change B&W mode. Specify "color", "bw", "autoL", "autoM" or "autoH". IR filter is on when "color" is set. IR filter is off when "bw" is set. IR filter is operated dynamically according to image brightness after autoL/autoM/autoH is set. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Auto Focus mode for B&W switching from VN-V686

Format `/api/param?camera.image.true_daynight.af`

Example of response `camera.image.true_daynight.af=on&200 OK`

Interpretation Acquire auto focus mode for B&W switching. "on" or "off" is returned. When the setting is "on", auto focus works when B&W mode is switched.

Allowed users admin, operator, user

Setting Auto Focus mode for B&W switching for VN-V686

Format `/api/param?camera.image.true_daynight.af=data`

Example `/api/param?camera.image.true_daynight.af=on`

Example of response

```
camera.image.true_daynight.af&202 Accepted(camera.status=save)
```

Interpretation Change auto focus mode for B&W switching. Specify "on" or "off". When the setting is "on", auto

focus works when B&W mode is switched. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Light setting for focus in B&W mode from VN-V686

Format `/api/param?camera.image.true_daynight.light`

Example of response `camera.image.true_daynight.light=normal&200 OK`

Interpretation Acquire light setting for focus in B&W mode. "normal" or "infrared" is returned. When the setting is "infrared", focus at zooming works correctly with infrared light in B&W mode.

Allowed users admin, operator, user

Setting Light for focus in B&W mode for VN-V686

Format `/api/param?camera.image.true_daynight.light=data`

Example `/api/param?camera.image.true_daynight.af=infrared`

Example of response

`camera.image.true_daynight.light&202 Accepted(camera.status=save)`

Interpretation Change light setting for focus in B&W mode. Specify "normal" or "infrared". When the setting is "infrared", focus at zooming works correctly with infrared light in B&W mode. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Saving Image Settings for Auto Pan and Auto Trace

Format `/api/param?canera.motion.auto_pan.image=save`

`/api/param?canera.motion.auto_trace.image=save`

Example of response `canera.motion.auto_pan.image&200 OK`

`canera.motion.auto_trace.image&200 OK`

Interpretation Save current image settings for Auto Pan and Auto Trace. Common image settings are used for both of Auto Pan and Auto Trace. Saved settings are iris, BLC and white balance. Saved settings are applied during Auto Pan and Auto Trace.

Allowed users admin, operator

Note of Iris Setting: After power on, iris setting of Home position is applied. After moving to preset position, iris setting of the position is applied. During Auto Pan and Auto Trace, iris setting for Auto Pan and Auto Trace is applied. When iris setting is changed by API, the change is temporal. To save current iris setting for preset position, use camera(num).status=save. To save current iris setting for Auto Pan and Auto Trace, use

camera.motion.auto_pan.image=save.

Getting Iris from VN-V686

Format `/api/param?camera.iris`

Example of response `camera.iris=autoM&200 OK`

Interpretation Acquire iris setting. When iris is manual, value from 0 to 100 is returned. When iris is auto,"autoL", "autoM" or "autoH" is returned. 100 means full open.

Allowed users admin, operator, user

Setting Iris for VN-V686

Format `/api/param?camera.iris=data`

Example to set fixed value `/api/param?camera.iris=50`

Example to set auto `/api/param?camera.iris=autoM`

Example to change from auto to maual `/api/param?camera.iris=manual`

Example of response `camera.iris&202 Accepted(camera(num).status=save or camera.motion.auto_pan.image=save)`

Interpretation Change iris setting. Specify 0 to 100 to set fixed value. 100 means full open. Specify "autoL", "autoM" or "autoH" to set auto. Specify "manual" to change from auto to manual. Current manual value is saved to preset position by the API, camera(num).status=save. Current manual value is saved to Auto Pan and Auto Trace by the API, camera.motion.auto_pan.image=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Setting Iris Direction for VN-V686

Format `/api/param?camera.iris.mode=data`

Example to open `/api/param?camera.iris.mode=open`

Example of response `camera.iris.mode&200 OK`

Interpretation Change direction setting fo iris. Specify "open" or "close".

Allowed users admin, operator

Operating Iris for VN-V686

Format `/api/param?camera.iris.status=data`

Example to start `/api/param?camera.iris.status=start`

Example of response `camera.iris.status&200 OK`

Interpretation Start or stop iris operation. Specify "start" or "stop".

Allowed users admin, operator

Note of White Balance Setting: After power on, White Balance setting of Home position is applied. After moving to preset position, White Balance setting of the position is applied. During Auto Pan and Auto Trace, White Balance setting for Auto Pan and Auto Trace is applied. When White Balance setting is changed by API, the change is temporal. To save current White Balance setting for preset position, use camera(num).status=save. To save current White Balance setting for Auto Pan and Auto Trace, use camera.motion.auto_pan.image=save.

Getting White Balance from VN-V686

Format `/api/param?camera.image.white_balance`

Example of response `camera.image.white_balance=autoW&200 OK`

Interpretation Acquire white balance setting. "autoW", "autoN" or "manual" is returned.

Allowed users admin, operator, user

Setting White Balance for VN-V686

Format `/api/param?camera.image.white_balance=data`

Example `/api/param?camera.image.white_balance=autoW`

Example of response `camera.image.white_balance&202 Accepted(camera.status=save or camera.motion.auto_pan.image=save)`

Interpretation Change white balance setting. Specify "autoW", "autoN", "manual" or "op_auto". "autoW" works in wide range, and "autoN" works in narrow range of color. "autoW", "autoN" or current manual value is saved to preset position by the API, camera(num).status=save. "autoW", "autoN" or current manual value is saved to Auto Pan and Auto Trace by the API, camera.motion.auto_pan.image=save. If "op_auto" is specified, one push auto white balance control is done, and setting becomes "manual". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting R-Gain of White Balance from VN-V686

Format `/api/param?camera.image.white_balance.r`

Example of response `camera.image.white_balance.r=s85&200 OK`

Interpretation Acquire R-gain of white balance setting. s0 to s255 is returned. The s before number means "step".

Allowed users admin, operator, user

Setting R-Gain of White Balance for VN-V686

Format `/api/param?camera.image.white_balance.r=data`

Example of response

`camera.image.white_balance.r&202 Accepted(camera.status=save or camera.motion.auto_pan.image=save)`

Interpretation Change R-gain white balance setting. Specify s0 to s255. The s before number means "step". Default value is s85. The change is saved to preset position by the API, camera(num).status=save. The change is saved to Auto Pan and Auto Trace by the API, camera.motion.auto_pan.image=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting B-Gain of White Balance from VN-V686

Format `/api/param?camera.image.white_balance.b`

Example of response `camera.image.white_balance.b=s219&200 OK`

Interpretation Acquire B-gain of white balance setting. s0 to s255is returned. The s before number means "step".

Allowed users admin, operator, user

Setting B-Gain of White Balance for VN-V686

Format `/api/param?camera.image.white_balance.b=data`

Example of response

`camera.image.white_balance.b&202 Accepted(camera.status=save)`

Interpretation Change B-gain white balance setting. Specify s0 to s255. The s before number means "step". The change is saved to preset position by the API, camera(num).status=save. The change is saved to Auto Pan and Auto Trace by the API, camera.motion.auto_pan.image=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Note of Back Light Compensation Setting: After power on, Back Light Compensation setting of Home position is applied. After moving to preset position, Back Light Compensation setting of the position is applied. During Auto Pan and Auto Trace, Back Light Compensation setting for Auto Pan and Auto Trace is applied. When Back Light Compensation setting is changed by API, the change is temporal. To save current Back Light Compensation setting for preset position, use camera(num).status=save. To save current Back Light Compensation setting for Auto Pan and Auto Trace, use camera.motion.auto_pan.image=save.

Getting Back Light Compensation from VN-V686

Format `/api/param?camera.image.blc`

Example of response `camera.image.blc=off&200 OK`

Interpretation Acquire Back Light Compensation setting. "off", "a", "b", "c" or "d" is returned. Refer the instruction manual for detailed information of "a", "b", "c" and "d".

Allowed users admin, operator, user

Setting Back Light Compensation for VN-V686

Format `/api/param?camera.image.blc=data`

Format of setting ON `/api/param?camera.image.blc=a`

Example of response `camera.image.blc&202 Accepted(camera.status=save)`

Interpretation Change Back Light Compensation setting. Specify "off", "a", "b", "c" or "d". Refer the instruction manual for detailed information of "a", "b", "c" and "d". The change is saved to preset position by the API, camera(num).status=save. The change is saved to Auto Pan and Auto Trace by the API, camera.motion.auto_pan.image=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

6.3. Encoding

These APIs are related to JPEG or MPEG-4 encoding. These are equivalent to the features on the Encoding page of the WEB setting page. Refer to the instruction manual for details on the Encoding page.

Saving Changes of Encode Settings for VN-V686

Format `/api/param?encode(1).status=save`

`or` `/api/param?encode(2).status=save`

Example of response `encode(1).status&200 OK`

Interpretation Save changes to encode settings. All JPEG and MPEG-4 settings are saved. If not saved, the changes are restored by power off of VN-V686.

Allowed users admin, operator

Getting JPEG Frame Size from VN-V686

Format `/api/param?encode(1).framesize`

Example of response `encode(1).framesize=vga&200 OK`

Interpretation Acquire JPEG frame size setting. "vga" or "qvga" is returned.

Allowed users admin, operator, user

Setting JPEG Frame Size for VN-V686

Format `/api/param?encode(1).framesize=data`

Example `/api/param?encode(1).framesize=qvga`

Example of response `encode(1).framesize&202 Accepted(encode(1).status=save)`

Interpretation Change JPEG frame size. Specify "vga" or "qvga". File size setting is changed automatically when frame size is changed. If frame size is changed from vga to qvga, file size is changed to third part of original size. If frame size is changed from qvga to vga, file size is changed to three times size.

When frame size of JPEG and MPEG-4 are same, privacy masking is available for both compression. When they are

not same, compression on QVGA can have privacy masking.

The change is saved by the API, encode(1).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting JPEG Rate Control Setting from VN-V686

Format `/api/param?encode(1).cbr_mode`

Example of response `encode(1).cbr_mode=afs&200 OK`

Interpretation Acquire the rate control setting of JPEG. Quantization table is fixed in the case of vfs (VariableFileSize). In the case of afs (AverageFileSize), bit rates are controlled such that the average size of multiple files remains constant.

Allowed users admin, operator, user

Setting JPEG Rate Control for VN-V686

Format `/api/param?encode(1).cbr_mode=data`

Example `/api/param?encode(1).cbr_mode=vfs`

Example of response `encode(1).cbr_mode&202 Accepted(encode(1).status=save)`

Interpretation Change rate control of JPEG. Rate control can be set to vfs or afs. In vfs (VariableFileSize), quantization table is fixed. In afs (AverageFileSize), average file size of multiple JPEGs is controlled to be constant.

The change is saved by the API, encode(1).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting JPEG File Size Setting from VN-V686

Format `/api/param?encode(1).quality`

Example of response `encode(1).quality=40k&200 OK`

Interpretation Acquire the file size setting of JPEG. If the response is 40k for example, the setting is 40KB.

Allowed users admin, operator, user

Setting JPEG File Size Setting for VN-V686

Format `/api/param?encode(1).quality=Data`

Example `/api/param?encode(1).quality=30k`

Example of response `encode(1).quality&202 Accepted(encode(1).status=save)`

Interpretation Change the file size setting of JPEG. The unit of set values is in KB. VN-V686 will perform rate control with this file size as the target.

When frame size is VGA, setting between the range of 10k to 100k is possible. When frame size is QVGA, setting between the range of 3k to 33k is possible.

When VFS (VariableFileSize) is specified for rate control at the WEB setting page, 7 levels will be available for

selection. Each of these choices corresponds to the file sizes as follows.

Level	File Size Setting for VGA	File Size Setting for QVGA
1	80k	27k
2	60k	20k
3	40k	13k
4	30k	10k
5	25k	8k
6	20k	7k
7	15k	5k

When rate control is set to vfs and a file size that is not stated above is specified, the closest choice will be displayed on the WEB setting page. The change is saved by the API, encode(1).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting MPEG-4 Frame Size from VN-V686

Format `/api/param?encode(2).framesize`

Example of response `encode(2).framesize=vga&200 OK`

Interpretation Acquire MPEG-4 frame size setting. "vga" or "qvga" is returned.

Allowed users admin, operator, user

Setting MPEG-4 Frame Size for VN-V686

Format `/api/param?encode(2).framesize=data`

Example `/api/param?encode(2).framesize=qvga`

Example of response `encode(2).framesize&202 Accepted(encode(1).status=save)`

Interpretation Change MPEG-4 frame size. Specify "vga" or "qvga".

When frame size of JPEG and MPEG-4 are same, privacy masking is available for both compression. When they are not same, compression on QVGA can have privacy masking.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting MPEG-4 bitrate Setting from VN-V686

Format `/api/param?encode(2).bitrate`

Example of response `encode(2).bitrate=8000000&200 OK`

Interpretation Acquire the bitrate setting of MPEG-4. If the response is 8000000 for example, the setting is 8Mbps.

Allowed users admin, operator, user

Setting MPEG-4 bitrate Setting for VN-V686

Format `/api/param?encode(2).bitrate=Data`

Example `/api/param?encode(2).bitrate=2000000`

Example of response `encode(2).bitrate&202 Accepted(encode(2).status=save)`

Interpretation Change the bitrate setting of MPEG-4. Specify from 64000 to 8000000.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting MPEG-4 Rate Control Setting from VN-V686

Format `/api/param?encode(2).cbr_mode`

Example of response `encode(2).cbr_mode=cbr&200 OK`

Interpretation Acquire the rate control setting of MPEG-4. "cbr" or "vbr" is returned. Bitrate is controlled to be constant in the case of cbr (Constant Bitrate). In the case of vbr (Variable Bitrate), bitrate can be larger by input image.

Allowed users admin, operator, user

Setting MPEG-4 Rate Control for VN-V686

Format `/api/param?encode(2).cbr_mode=data`

Example `/api/param?encode(2).cbr_mode=vbr`

Example of response `encode(2).cbr_mode&202 Accepted(encode(2).status=save)`

Interpretation Change rate control of MPEG-4. Rate control can be set to cbr or vbr. Bitrate is controlled to be constant in the case of cbr (Constant Bitrate). In the case of vbr (Variable Bitrate), bitrate can be larger by input image. If vbr is set, frame rate of MPEG-4 becomes 30fps.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting MPEG-4 Frame Rate Setting from VN-V686

Format `/api/param?encode(2).framerate`

Example of response `encode(2).framerate=15&200 OK`

Interpretation Acquire frame rate of MPEG-4 encoding.

Allowed users admin, operator, user

Setting MPEG-4 Frame Rate Setting for VN-V686

Format `/api/param?encode(2).framerate=data`

Example `/api/param?encode(2).framerate=30`

Example of response `encode(2).framerate&202 Accepted(encode(2).status=save)`

Interpretation Change frame rate of MPEG-4. Specify 30, 25, 15, 10, 7.5, or 1. If vbr is set to MPEG-4 rate control, frame rate of MPEG-4 becomes 30fps. If I-Frame interval is not 30, 60, 120, 150, 180, 210 or 240, real frame rate becomes larger than the setting. Refer I-Frame interval API for details.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting MPEG-4 I-Frame Interval Setting from VN-V686

Format `/api/param?encode(2).iframeinterval`

Example of response `encode(2).iframeinterval=30&200 OK`

Interpretation Acquire I-Frame interval of MPEG-4 encoding.

Allowed users admin, operator, user

Setting MPEG-4 I-Frame Interval Setting for VN-V686

Format `/api/param?encode(2).iframeinterval=data`

Example `/api/param?encode(2).iframeinterval=30`

Example of response `encode(2).iframeinterval&202 Accepted(encode(2).status=save)`

Interpretation Change I-Frame interval of MPEG-4. Specify 1 to 255. If I-Frame interval is 30, 60, 120, 150, 180, 210 or 240, real frame rate is as frame rate setting. If I-Frame interval is not 30, 60, 120, 150, 180, 210 or 240, real frame rate becomes larger than the setting because I-Frame can not be skipped. If I-Frame setting is 1, all frames become I-Frame and frame rate becomes 30fps.

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting MPEG-4 Priority Setting from VN-V686

Format `/api/param?encode(2).priority`

Example of response `encode(2).priority=motion&200 OK`

Interpretation Acquire priority of MPEG-4 encoding. "motion" or "quality" is returned.

Allowed users admin, operator, user

Setting MPEG-4 Priority Setting for VN-V686

Format `/api/param?encode(2).priority=data`

Example `/api/param?encode(2).priority=motion`

Example of response `encode(2).priority&202 Accepted(encode(2).status=save)`

Interpretation Change priority of MPEG-4. Specify "motion" or "quality". To keep frame rate, select "motion". To keep image quality, select "quality".

The change is saved by the API, encode(2).status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

6.4. Alarm Setting

The APIs below are related to alarm setting. These are equivalent to the features on the Alarm page of the WEB setting page. Refer to the instruction manual for details on the Alarm page.

Getting On/Off of Alarm Action from VN-V686

Format `/api/param?application.event(Number).status`

Example When Getting the on/off status of alarm action No. 1

`/api/param?application.event(1).status`

Example of response `application.event(1).status=on&200 OK`

Interpretation Acquire the on/off status of the alarm action for the specified alarm action number. 5 alarm actions and 1 periodic FTP assigned to No.6 are available, so alarm action number can be 1 to 6. Note that alarm numbers are different from the alarm input pin numbers. Either on or off is returned.

Allowed users admin, operator

Setting On/Off of Alarm Action, or Enabling Changes to Alarm Action for VN-V686

Format `/api/param?application.event(Number).status=data`

Example When setting alarm action No. 1 to off

`/api/param?application.event(1).status=off`

Example of response `application.event(1).status&200 OK`

Interpretation Set the alarm action of the specified alarm action number to on/off, or enable changes to the alarm action. 5 alarm actions and 1 periodic FTP assigned to No.6 are available, so alarm action number can be 1 to 6. Note that alarm numbers are different from the alarm input pin numbers. Either on or off will be returned.
Specify "on", "off" or "restart". By "restart", changes to alarm action and alarm trigger are enabled. By "on" after "restart", the alarm action starts working with the changed settings. If "restart" is not set after changes to alarm action and alarm trigger, APIs to get settings of alarm action and alarm trigger return previous values.

Allowed users admin, operator

Getting Alarm Action from VN-V686

Format `/api/param?application.event(Number).action`

Example When Getting action of alarm action No. 1

`/api/param?application.event(1).action`

Example of Response

```
application.event(1).action=mailto/somebody@somecompany.com/none/Message&200
OK
```

Interpretation Acquire the alarm action of the specified alarm action number. 5 alarm actions and 1 periodic FTP assigned to No.6 are available, so alarm action number can be 1 to 6. Note that alarm numbers are different from the alarm input pin numbers. A separate API (/api/param?application.event(Number).status) is used to acquire the on/off status of the alarm action.

When no action is specified, response below is returned.

Example of Response `application.event(1).action=&200 OK`

When sending mail is specified, mailto, mail address, JPEG attaching and the character string to be sent will be returned. When spaces are included in the character string, the character string with spaces will be returned. Segments are indicated by /. If JPEG attaching is on, "object01" is returned, and if JPEG attaching is off, "none" is returned.

Example of Response

```
application.event(1).action=mailto/somebody@somecompany.com/object01/Message&2
00 OK
```

When "PrePostRecording + FTP" is specified, recftp, FTP number, and the attached object number will be returned. Segments are indicated by /. The FTP number is fixed as ftp01 at all times. The object number is fixed as object01. Parameters of FTP can be gotten by other APIs, application.ftp and application.object.

Example of Response `application.event(1).action=recftp/ftp01/object01&200 OK`

When sending via TCP is specified, tcpto, IP address, port number and the character string to be sent will be returned. Segments are indicated by /.

Example of Response

```
application.event(1).action=tcpto/10.0.0.100/20000/Message&200 OK
```

When sending via UDP is specified, udpto, IP address, port number and the character string to be sent will be returned. Segments are indicated by /.

Example of Response

```
application.event(1).action=udpto/10.0.0.100/20000/Message&200 OK
```

When alarm output is specified, pinout, distinction between make/break (m1 or b1) and output time (millisecond) will be returned. Segments are indicated by /.

Example of Response `application.event(1).action=pinout/m1/1500&200 OK`

When preset position is specified, position number will be returned.

Example of Response when position number is 2

`application.event(1).action=camera.position(2).status/goto&200 OK`

When B&W mode is specified, true_daynight/bw, true_daynight/color, true_daynight/autoH, true_daynight/autoM or true_daynight/autoL will be returned.

Example of Response when B&W mode is bw

`application.event(1).action=camera.image.true_daynight/bw&200 OK`

Alarm action of event number 6 is periodic FTP. Response to the API has ftpto, FTP number, and the attached object number. Segments are indicated by /. The FTP number is fixed as ftp01 at all times. The object number is fixed as object01. Parameters of FTP can be gotten by another API, application.ftp.

Example of Response **`application.event(6).action=ftpto/ftp01/object01&200 OK`**

Allowed users admin, operator

Setting Alarm Action for VN-V686

Format **`/api/param?application.event(Number).action=Data`**

Example When setting action of Alarm No. 1

`/api/param?application.event(1).action=mailto/somebody@somecompany.com/none/Message`

Example of Response

`application.event(1).action&202 Accepted(application.event(1).status=restart)`

Interpretation Set the alarm action of the specified alarm number. Up to 5 alarm actions can be specified, and therefore the number of alarm(number) can also be set between the range of 1 to 5. Note that alarm numbers are different from the alarm input pin numbers. A separate API (/api/param?application.event(Number).status=off) is used to set the alarm action to off.

The action will be activated by setting the alarm trigger. The API for setting the alarm trigger is /api/param?application.event(Number).trigger.

The changes to settings of alarm action become valid by /api/param?application.event(Number).status=restart.

Specify mailto, mail address, JPEG attach and the character string to be sent when sending via mail. Segments are indicated by /. The maximum number of characters for the mail address is 95. To attach JPEG, specify object01. If none is specified instead of object01, JPEG is not attached to the mail. Number of the character string is from 1 to 127 bytes. To use following characters, specify by hexadecimal number after %.

space & / < > # % ″ { } | ¥ ^ [ ] `

For example, specify 3 characters %20 when inserting a space in the character string. For example, to send the character string "This is alarm.", specify as "This%20is%20alarm.". %09 and %0D are not available.

Setting Example

/api/param?application.event(1).action=mailto/somebody@somecompany.com/object01/Alarm%20ON

The character string "Alarm from VN-V686" will be stored in the title field of the mail.

Specify recftp, FTP number and the object for PrePostRecording+FTP. The FTP number is fixed as ftp01 at all times. The object is fixed as object01. Parameters of FTP can be set by other APIs, application.ftp and application.object. Ensure to set the FTP server (/api/param?application.ftp.host, /api/param?application.object.framerate etc.) before setting PrePostRecording+FTP.

Setting Example **/api/param?application.event(1).action=ftpto/ftp01/object01**

Specify tcpto, IP address, port number and the character string to be sent when sending via TCP. Segments are indicated by /. The number of character string is from 1 to 127 bytes. To use following characters, specify by hexadecimal number after %.

space & / < > # % ″ { } | ¥ ^ [ ] `

For example, specify 3 characters %20 when inserting a space in the character string. For example, to send the character string "This is alarm.", specify as "This%20is%20alarm.". %09 and %0D are not available.

Setting Example

/api/param?application.event(1).action=tcpto/10.0.0.100/20000/Message

Specify udpto, IP address, port number and the character string to be sent when sending via UDP. Segments are indicated by /. The number of character string is from 1 to 127 bytes. To use following characters, specify by hexadecimal number after %.

space & / < > # % ″ { } | ¥ ^ [ ] `

For example, specify 3 characters %20 when inserting a space in the character string. For example, to send the character string "This is alarm.", specify as "This%20is%20alarm.". %09 and %0D are not available.

Setting Example

/api/param?application.event(1).action=udpto/10.0.0.100/20000/Message

Specify pinout, distinction between make/break (m1 or b1) and the time (millisecond) when alarm output is specified. Segments are indicated by /. The time is 0 or from 100 to 5000. When the time is 0, alarm output does not come back to previous state.

Setting Example **/api/param?application.event(1).action=pinout/m1/1500**

Specify preset position number when preset position is specified.

Setting Example

`/api/param?application.event(1).action=camera.position(2).status/goto`

Specify true_daynight/bw, true_daynight/color, true_daynight/autoH, true_daynight/autoM or true_daynight/autoL when B&W mode is specified.

Setting Example

`/api/param?application.event(1).action=camera.image.true_daynight/bw`

Alarm action of event number 6 is periodic FTP. Event 1 to 5 can not be set to periodic FTP. Parameters of FTP can be set by another API, application.ftp.

Allowed users admin, operator

Getting Alarm Filter Setting from VN-V686

Format **`/api/param?application.event(Number).filter(WeekOfDay).status`**

Example When Getting Setting of Sunday filter of Alarm No. 1

`/api/param?application.event(1).filter(sunday).status`

Example of Response **`application.event(1).filter(sunday).status=off&200 OK`**

Interpretation Acquire filter setting of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay. When the filter is enabled, on will be returned. When the filter is disabled, off will be returned.

Allowed users admin, operator

Setting Alarm Filter for VN-V686

Format **`/api/param?application.event(Number).filter(WeekOfDay).status=data`**

Example When setting Sunday filter of Alarm No. 1

`/api/param?application.event(1).filter(sunday).status=on`

Example of Response

`application.event(1).filter(sunday).status&202`

`Accepted(application.event(1).status=restart)`

Interpretation Set filter setting of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay.

Specify on to enable the filter, off to disable the filter.

The changes to filter of alarm action is saved by /api/param?application.event(Number).status=restart.

Allowed users admin, operator

Getting Alarm Filter Time from VN-V686

Format `/api/param?application.event(Number).filter(WeekOfDay).time`

Example When Getting Time of Sunday filter of Alarm No. 1

`/api/param?application.event(1).filter(sunday).time`

Example of Response `application.event(1).filter(sunday).time=000000-240000&200 OK`

Interpretation Acquire filter time of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay. Start time and end time is returned in the format like hhmmss-hhmmss. Start time can be from 000000 to 235959. End time can be from 000001 to 240000.

Allowed users admin, operator

Setting Alarm Filter Time for VN-V686

Format `/api/param?application.event(Number).filter(WeekOfDay).time=data`

Example When setting Sunday filter time of Alarm No. 1

`/api/param?application.event(1).filter(sunday).time=010200-040500`

Example of Response

```
application.event(1).filter(sunday).time&202
Accepted(application.event(1).status=restart)
```

Interpretation Set filter time of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay.

Specify start time and end time in the format like hhmmss-hhmmss. Start time can be from 000000 to 235959. End time can be from 000001 to 240000. Start time must be earlier than end time.

The changes to filter of alarm action is saved by /api/param?application.event(Number).status=restart.

Allowed users admin, operator

Getting Alarm Filter Type from VN-V686

Format `/api/param?application.event(Number).filter(WeekOfDay).type`

Example When Getting Type of Sunday filter of Alarm No. 1

```
/api/param?application.event(1).filter(sunday).type
```

Example of Response `application.event(1).filter(sunday).type=mask&200 OK`

Interpretation Acquire filter type of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay. "mask" or "unmask" is returned. When the setting is mask, alarm action is disabled during the filter time. When the setting is unmask, alarm action is enabled during the filter time.

Allowed users admin, operator

Setting Alarm Filter Type for VN-V686

Format `/api/param?application.event(Number).filter(WeekOfDay).type=data`

Example When setting Sunday filter type of Alarm No. 1 to be unmask

```
/api/param?application.event(1).filter(sunday).type=unmask
```

Example of Response

```
application.event(1).filter(sunday).type&202
Accepted(application.event(1).status=restart)
```

Interpretation Set filter type of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

Specify sunday, monday, tuesday, wednesday, thursday, friday or saturday for WeekOfDay.

Specify mask or unmask. When the setting is mask, alarm action is disabled during the filter time. When the setting is unmask, alarm action is enabled during the filter time.

The changes to filter of alarm action is saved by /api/param?application.event(Number).status=restart.

Allowed users admin, operator

Getting Alarm Trigger from VN-V686

Format `/api/param?application.event(Number).trigger`

Example When Getting Trigger of Alarm No. 1

```
/api/param?application.event(1).trigger
```

Example of Response `application.event(1).trigger=m1&200 OK`

Interpretation Acquire Trigger of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

When only 1 Trigger is set:

m1 will be returned in the case of make for alarm input 1.

b1 will be returned in the case of break for alarm input 1.

m2 will be returned in the case of make for alarm input 2.

b2 will be returned in the case of break for alarm input 2.

v1 will be returned for motion detection of video.

ncbws will be returned for IR filter OFF.

ncbwe will be returned for IR filter ON.

efans will be returned for fan stop.

camera.position(num).status will be returned for preset position. "num" is from 0 to 99.

Example of Response `application.event(1).trigger=v1&200 OK`

When a combination of 2 Triggers are set, responses such as m1(10)b2 will be returned. The example indicates that trigger will be activated when break is invoked at alarm input 2 within 10 seconds after make is invoked at alarm input 1.

Example of Response `application.event(1).trigger=m1(100)b2&200 OK`

Allowed users admin, operator

Setting Alarm Trigger for VN-V686

Format `/api/param?application.event(Number).trigger=data`

Example When setting Trigger of Alarm No. 1

`/api/param?application.event(1).trigger=m1`

Example of Response

`application.event(1).trigger&202`

`Accepted(application.event(1).status=restart)`

Interpretation Set Trigger of the alarm action for the specified alarm number. Up to 5 alarm actions can be specified, and periodic FTP is assigned to event No.6, therefore the number of alarm(number) can be set between the range of 1 to 6. Note that alarm numbers are different from the alarm input pin numbers.

The changes to settings of alarm action become valid by /api/param?application.event(Number).status=restart.

When setting only 1 Trigger:

specify m1 in the case of Make for alarm input 1.

specify b1 in the case of Break for alarm input 1.

specify m2 in the case of Make for alarm input 2.

specify b2 in the case of Break for alarm input 2.

specify v1 for motion detection of video.

specify ncbws for IR Filter OFF.

specify ncbwe for IR Filter ON.

specify efans for fan stop.

specify camera.position(num).status for preset position. "num" is from 0 to 99.

Setting Example `/api/param?application.event(1).trigger=v1`

Interval can be set to periodic ftp assigned to event(6). Set "i1500" for interval 1500 seconds.

Setting Example `/api/param?application.event(6).trigger=i1500`

When setting Trigger upon combining 2 alarm inputs, specify as m1(50)b2. The example above indicates that trigger will be activated when break is invoked at alarm input 2 within 50 seconds after make is invoked at alarm input 1. Additionally, combination is only allowed for alarm inputs and not motion detect. And same alarm can not be combined. For example, m1(50)m1 is not available.

Setting Example `/api/param?application.event(1).trigger=m1(100)b2`

Allowed users admin, operator

6.5. Alarm Environment Setting

The APIs below are related to alarm environment setting. These are equivalent to the features on the Alarm Environment page of the WEB setting page. Refer to the instruction manual for details on the Alarm Environment page.

Getting SMTP Server Address Setting from VN-V686

Format `/api/param?application.smtp.host`

Example of Response `application.smtp.host=192.168.0.200&200 OK`

Response example when setting field is left blank `application.smtp.host=&200 OK`

Interpretation Acquire the address setting of the SMTP server.

Allowed users admin, operator, user

Setting SMTP Server Address for VN-V686

Format `/api/param?application.smtp.host=data`

Example `/api/param?application.smtp.host=192.168.0.200`

Example of Response `application.smtp.host&200 OK`

Interpretation Change the address setting of the SMTP server. Specify the IP address or FQDN. The maximum FQDN size is 63 bytes. Specify as 0.0.0.0 when the SMTP server is not set. It is also possible to leave the setting field blank as follows. `/api/param?application.smtp.host=%00`

Allowed users admin, operator

Getting SMTP Server Port Number Setting from VN-V686

Format `/api/param?application.smtp.port`

Example of Response `application.smtp.port=25&200 OK`

Interpretation Acquire the port number setting of the SMTP server.

Allowed users admin, operator, user

Setting SMTP Server Port Number for VN-V686

Format `/api/param?application.smtp.port=data`

Example `/api/param?application.smtp.port=25`

Example of Response `application.smtp.port&200 OK`

Interpretation Change the port number setting of the SMTP server.

Allowed users admin, operator

Getting Sender Mail Address Setting from VN-V686

Format `/api/param?application.smtp.mailfrom`

Example of Response `application.smtp.mailfrom=somebody@somecompany.com&200 OK`

Interpretation Acquire sender mail address setting. POP user name is used as local part of sender mail address when sender mail address setting is blank. When POP user name is also blank, the local-part is set to "vn_v25@hostname". When the hostname is also blank, SMTP server decide sender mail address.

Allowed users admin, operator, user

Setting Sender Mail Address for VN-V686

Format `/api/param?application.smtp.mailfrom=data`

Example `/api/param?application.smtp.mailfrom=somebody@somecompany.com`

Example of Response `application.smtp.mailfrom&200 OK`

Interpretation Change sender mail address setting. Maximum text number of sender mail address is 96. Alphanumeric and followings are available.

! # $ % & ' * + - / = ? ^ _ ` { } | ~

POP user name is used as local part of sender mail address when sender mail address setting is blank. When POP user name is also blank, the local-part is set to "vn_v25@hostname". When the hostname is also blank, SMTP server decide sender mail address.

Allowed users admin, operator

Getting "POP before SMTP" Setting from VN-V686

Format `/api/param?application.smtp.type`

Example of Response `application.smtp.type=pbs&200 OK`

Interpretation Acquire the "POP before SMTP" setting. "simple" is returned when this is set to off. "pbs" is

returned when this is set to on.

Allowed users admin, operator, user

Setting "POP before SMTP" for VN-V686

Format `/api/param?application.smtp.type=data`

Example `/api/param?application.smtp.type=pbs`

Example of Response `application.event.smtp.type&200 OK`

Interpretation Change the "POP before SMTP" setting. Specify as "simple" when setting to off and "pbs" when setting to on.

Allowed users admin, operator

Getting POP Server Address Setting from VN-V686

Format `/api/param?application.pop.host`

Example of Response `application.pop.host=192.168.0.200&200 OK`

Response example when setting field is left blank `application.pop.host=&200 OK`

Interpretation Acquire the address setting of the POP server.

Allowed users admin, operator, user

Setting POP Server Address for VN-V686

Format `/api/param?application.pop.host=data`

Example `/api/param?application.pop.host=192.168.0.200`

Example of Response `application.pop.host&200 OK`

Interpretation Change the address setting of the POP server. Specify the IP address or FQDN. The maximum FQDN size is 63 bytes. Specify as 0.0.0.0 when the POP server is not set. It is also possible to leave the setting field blank as follows. `/api/param?application.pop.host=%00`

Allowed users admin, operator

Getting POP Server Port Number Setting from VN-V686

Format `/api/param?application.pop.port`

Example of Response `application.pop.port=110&200 OK`

Interpretation Acquire the port number setting of the POP server.

Allowed users admin, operator, user

Setting POP Server Port Number for VN-V686

Format `/api/param?application.pop.port=data`

Example `/api/param?application.pop.port=110`

Example of Response `application.pop.port&200 OK`

Interpretation Change the port number setting of the POP server.

Allowed users admin, operator

Getting POP Server User Name Setting from VN-V686

Format `/api/param?application.pop.user`

Example of Response `application.pop.user=somename&200 OK`

Response example when setting field is left blank `application.pop.user=&200 OK`

Interpretation Acquire the user name setting of the POP server. The user name is used as local part of sender mail address when sender mail address setting is blank. When the user name is blank, the local-part is set to "vn_c20".

Example of Response `application.pop.user=somename&200 OK`

Example of Mail Address **somename@somecompany.com**

Allowed users admin, operator, user

Setting POP Server User Name for VN-V686

Format `/api/param?application.pop.user=data`

Example `/api/param?application.pop.user=somename`

Example of Response `application.pop.user&200 OK`

Interpretation Change the user name setting of the POP server. The maximum user name size is 64 bytes. Set as follows when this is to be left blank.

`/api/param?application.pop.user=%00`

The user name is used as local part of sender mail address when sender mail address setting is blank. When the user name is blank, the local-part is set to "vn_c20". When POP before SMTP is disabled, it is not necessary to set POP server settings other than POP user name setting.

Example of setting `/api/param?application.pop.user=somename`

Example of Mail Address `somename@somecompany.com`

Following characters must not be used in user name.

space ( ) < > [ ] : ; ¥ ,(comma)

Allowed users admin, operator

Setting POP Server Password for VN-V686

Format `/api/param?application.pop.password=data`

Example `/api/param?application.pop.password=someword`

Example of Response `application.pop.password&200 OK`

Interpretation Change the password setting of the POP server. The maximum password size is 32 bytes. Set as follows when this is to be left blank. `/api/param?application.pop.password=%00`

Allowed users admin, operator

(Note: There is no API for reading passwords.)

Getting FTP Server Address Setting from VN-V686

Format `/api/param?application.ftp.host`

Example of Response `application.ftp.host=192.168.0.200&200 OK`

Response example when setting field is left blank `application.ftp.host=&200 OK`

Interpretation Acquire the FTP server address setting used for FTP transmission via alarm.

Allowed users admin, operator, user

Setting FTP Server Address for VN-V686

Format `/api/param?application.ftp.host=data`

Example `/api/param?application.ftp.host=10.0.0.200`

Example of Response `application.ftp.host&200 OK`

Interpretation Change the FTP server address setting used for FTP transmission via alarm. Specify the IP address or FQDN. The maximum FQDN size is 63 bytes. Specify as 0.0.0.0 when the FTP server is not set. It is also possible to leave the setting field blank as follows. `/api/param?application.ftp.path=%00`

Allowed users admin, operator

Getting FTP Server Path Setting from VN-V686

Format `/api/param?application.ftp.path`

Example of Response `application.ftp.path=subdir1&200 OK`

Response example when setting field is left blank `application.ftp.path=&200 OK`

Interpretation Acquire the FTP server directory setting used for FTP transmission via alarm.

Allowed users admin, operator, user

Setting FTP Server Path for VN-V686

Format `/api/param?application.ftp.path=data`

Example `/api/param?application.ftp.path=subdir1`

Example of Response `application.ftp.path&200 OK`

Interpretation Change the FTP server directory setting used for FTP transmission. It is possible to set FTP transmission to a directory under the FTP server home directory by specifying that directory name. Use %2F to segment the directory. ("2F" is ASCII code of "/".) The maximum directory name size is 63 bytes.

Example `/api/param?application.ftp.path=subdir1%2Fsubdir2`

By leaving the setting blank as follows, FTP transmission will be set to the FTP server home directory.

`/api/param?application.ftp.path=%00`

Allowed users admin, operator

Getting FTP Server User Name Setting from VN-V686

Format `/api/param?application.ftp.user`

Example of Response `application.ftp.user=somename&200 OK`

Response example when setting field is left blank `application.ftp.user=&200 OK`

Interpretation Acquire the FTP server user name setting used for FTP transmission via alarm.

Allowed users admin, operator

Setting FTP Server User Name for VN-V686

Format `/api/param?application.ftp.user=data`

Example `/api/param?application.ftp.user=somename`

Example of Response `application.ftp.user&200 OK`

Interpretation Change the FTP server user name setting used for FTP transmission via alarm. The maximum user name size is 32 bytes. Set as follows when this setting is to be left blank.

`/api/param?application.ftp.user=%00`

Allowed users admin, operator

Setting FTP Server Password for VN-V686

Format `/api/param?application.ftp.password=data`

Example `/api/param?application.ftp.password=someword`

Example of Response `application.ftp.password&200 OK`

Interpretation Change the FTP server password setting used for FTP transmission via alarm. The maximum password size is 32 bytes. Set as follows when this setting is to be left blank.

`/api/param?application.ftp.password=%00`

Allowed users admin, operator

(There is no API for Getting passwords.)

Getting File Naming of Periodic FTP from VN-V686

Format `/api/param?application.ftp.naming`

Example of Response `application.ftp.naming=default&200 OK`

Interpretation Acquire file naming of periodic FTP. "default", "type1" or "type2" is returned. When default is set, the file name is as YYYYMMDDHHMMSS-NNN-2.jpg.

Example 20060207201315-001-2.jpg

When type1 is set, the file name is as ***YYYMMDDHHMMSSNNN.jpg. "***" can be gotten by another API, /api/param?application.ftp.naming_option.

File Name Example Camera_20060207201315001.jpg

When type2 is set, the file name is as ***.jpg. "***" can be gotten by another API, /api/param?application.ftp.naming_option.

File Name Example Camera.jpg

Allowed users admin, operator

Setting File Naming of Periodic FTP for VN-V686

Format `/api/param?application.ftp.naming=data`

Example `/api/param?application.ftp.naming=type1`

Example of Response `application.ftp.naming&200 OK`

Interpretation Change file naming of periodic FTP. Specify "default", "type1" or "type2". When default is set, the file name is as YYYYMMDDHHMMSS-NNN-2.jpg.

Example 20060207201315-001-2.jpg

When type1 is set, the file name is as ***YYYYMMDDHHMMSSNNN.jpg. "***" can be set by another API, /api/param?application.ftp.naming_option.

File Name Example Camera_20060207201315001.jpg

When type2 is set, the file name is as ***.jpg. "***" can be set by another API, /api/param?application.ftp.naming_option.

File Name Example Camera.jpg

Allowed users admin, operator

Getting User Define Name of File Naming from VN-V686

Format `/api/param?application.ftp.naming_option`

Example of Response `application.ftp.naming_option=abc&200 OK`

Interpretation Acquire user define name for file naming of periodic FTP. The maximum size is 16 bytes. When /api/param?application.ftp.naming_option is set to "type1", the file name is as ***YYYMMDDHHMMSSNNN.jpg, and "***" can be gotten by this API.

File Name Example Camera_20060207201315001.jpg

When /api/param?application.ftp.naming_option is set to "type2", the file name is as ***.jpg and "***" can be gotten by this API.

File Name Example Camera.jpg

Allowed users admin, operator

Setting User Define Name of File Naming for VN-V686

Format `/api/param?application.ftp.naming_option=data`

Example of Response `application.ftp.naming_option&200 OK`

Interpretation Change user define name for file naming of periodic FTP. The maximum size is 16 bytes. When /api/param?application.ftp.naming_option is set to "type1", the file name is as ***YYYMMDDHHMMSSNNN.jpg, and "***" can be set by this API.

File Name Example Camera_20060207201315001.jpg

When /api/param?application.ftp.naming_option is set to "type2", the file name is as ***.jpg and "***" can be set by this API.

File Name Example Camera.jpg

Allowed users admin, operator

Getting Parameters of Pre/Post Recording from VN-V686

Format

To get Frame Rate `/api/param?application.object.framerate`

To get Pre Duration `/api/param?application.object.prerec`

To get Post Duration `/api/param?application.object.postrec`

Example of Response

For Frame Rate `application.object.framerate=10&200 OK`

For Pre Duration `/api/param?application.object.prerec=2&200 OK`

For Post Duration `/api/param?application.object.postrec=2&200 OK`

Interpretation Acquire parameters for PrePost + ftp. These parameters are used when recftp is set as an alarm action.

Allowed users admin, operator, user

Setting Parameters of Pre/Post Recording for VN-V686

Format

To set Frame Rate `/api/param?application.object.framerate=5`

To set Pre Duration `/api/param?application.object.prerec=3`

To set Post Duration `/api/param?application.object.postrec=3`

Example of Response

For Frame Rate `application.object.framerate&200 OK`

For Pre Duration `/api/param?application.object.prerec&200 OK`

For Post Duration `/api/param?application.object.postrec&200 OK`

Interpretation Change parameters for PrePost + ftp. These parameters are used when recftp is set as an alarm action. Specify 30, 15, 10, 7.5, 6, 5, 3, 2, or 1 for frame rate. Maximum Pre/Post duration is 60 seconds. Setting zero to Pre and Post duration is invalid.

Allowed users admin, operator

Getting Alarm Output Time Setting from VN-V686

Format `/api/param?peripheral.output_pin.pin(Number).duration`

Example `/api/param?peripheral.output_pin.pin(1).duration`

Example of Response `peripheral.output_pin.pin(1).duration=500&200 OK`

Interpretation Acquire the current alarm output duration in millisecond. Specify 1 or 2 to Number. When returned value is 0, it means infinite output.

Allowed users admin, operator, user

Setting Alarm Output Time for VN-V686

Format `/api/param?peripheral.input_pin.pin(Number).duration=data`

Example `/api/param?peripheral.input_pin.pin(1).duration=50`

Example of response `peripheral.input_pin.pin(1).duration&200 OK`

Interpretation Change the alarm output duration in millisecond. Specify 1 or 2 to Number. Specify 0, or 100 to 5000 for the duration. When 0 is set, output duration becomes infinite.

Allowed users admin, operator

Getting Alarm Output Status from VN-V686

Format `/api/param?peripheral.output_pin.pin(Number).status`

Example of Response `peripheral.output_pin.pin(1).status=make&200 OK`

Interpretation Acquire the current alarm output status. Specify 1 or 2 to Number. Either make or break will be returned.

Allowed users admin, operator, user

Changing Alarm Output of VN-V686

Format `/api/param?peripheral.output_pin.pin(Number).status=data`

Example `/api/param?peripheral.output_pin.pin(1).status=break`

Example of Response `peripheral.output_pin.pin(1).status&200 OK`

Interpretation Change the alarm output. Specify 1 or 2 to Number. Specify "make" or "break" to data.
When the alarm output time is zero, alarm output is changed as this API specifies. When the alarm output time is not zero, alarm output is changed as this API specifies, then alarm output is changed again after the alarm output time.

Allowed users admin, operator

6.6. PTZ

The APIs below are related to pan/tilt/zoom control. These are equivalent to the features on the PTZ page of the WEB setting page and PTZ Controller of built-in viewer. Refer to the instruction manual for details on the PTZ page and

PTZ Controller.

(1) Settings for PTZ Control

Getting Auto Return Mode from VN-V686

Format `/api/param?camera.motion.auto_return.mode`

Example of response `camera.motion.auto_return.mode=home&200 OK`

Interpretation Acquire Auto Return mode. "home", "auto_pan", "auto_patrol(1)", "auto_patrol(2)", "auto_patrol(3)", "auto_trace" or "auto_tracking" will be returned.

Allowed users admin, operator, user

Setting Auto Return Mode for VN-V686

Format `/api/param?camera.motion.auto_return.mode=data`

Example of Response `camera.motion.auto_return.mode&202`

`Accepted(camera.status=save)`

Interpretation Change Auto Return mode. Specify "home", "auto_pan", "auto_patrol(1)", "auto_patrol(2)", "auto_patrol(3)", "auto_trace" or "auto_tracking". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Timeout of Auto Return from VN-V686

Format `/api/param?camera.motion.auto_return.timeout`

Example of response `camera.motion.auto_return.timeout=60&200 OK`

Interpretation Acquire timeout of Auto Return in seconds.

Allowed users admin, operator, user

Setting Timeout of Auto Return for VN-V686

Format `/api/param?camera.motion.auto_return.timeout=data`

Example of Response `camera.motion.auto_return.timeout&202`

`Accepted(camera.status=save)`

Interpretation Change timeout of Auto Return in seconds. Specify 60, 120, 180, 300, 600, 1200, 1800 or 3600. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Auto Return Status from VN-V686

Format `/api/param?camera.motion.auto_return.status`

Example of response `camera.motion.auto_return.status=on&200 OK`

Interpretation Acquire status of Auto Return. "on" or "off" will be returned.

Allowed users admin, operator, user

Setting Auto Return Status for VN-V686

Format `/api/param?camera.motion.auto_return.status=data`

Example of Response `camera.motion.auto_return.status&202`

`Accepted(camera.status=save)`

Interpretation Change status of Auto Return. Specify "on" or "off" to change the status. Specify "start" or "stop" for manual operation. "on" or "off" is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Current Operation Status of Auto Tracking from VN-V686

Format `/api/param?camera.motion.auto_tracking.status`

Example of response `camera.motion.auto_tracking.status=on&200 OK`

Interpretation Acquire current operation status of Auto Tracking. "moving" or "stop" will be returned.

Allowed users admin, operator, user

Start/Stop of Auto Tracking for VN-V686

Format `/api/param?camera.motion.auto_tracking.status=data`

Example of Response `camera.motion.auto_tracking.status&200 OK`

Interpretation Start or stop Auto Tracking. Specify "start" or "stop". By "start", the camera moves to home position, then starts Auto Tracking. Motion detection is disabled during Auto Tracking.

Allowed users admin, operator

Getting Detection Level of Auto Tracking from VN-V686

Format `/api/param?camera.motion.auto_tracking.level`

Example of response `camera.motion.auto_tracking.level=50&200 OK`

Interpretation Acquire detection level of Auto Tracking. Value from 0 to 100 will be returned. 100 is most sensitive. The level is 11 steps internally.

Allowed users admin, operator, user

Setting Detection Level of Auto Tracking for VN-V686

Format `/api/param?camera.motion.auto_tracking.level=data`

Example of Response `camera.motion.auto_tracking.level&202`

`Accepted(camera.status=save)`

Interpretation Change detection level of Auto Tracking. Specify from 0 to 100. 100 is most sensitive. The level is 11 steps internally.The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Restart Time of Auto Tracking from VN-V686

Format `/api/param?camera.motion.auto_tracking.restarttime`

Example of response `camera.motion.auto_tracking.restarttime=10&200 OK`

Interpretation Acquire restart time of Auto Tracking in seconds. If there is no motion, the camera goes to home position after the restart time, and restarts Auto Tracking. "off", 10, 20, 30, 40, 50, 60 or 120 will be returned.

Allowed users admin, operator, user

Setting Restart Time of Auto Tracking for VN-V686

Format `/api/param?camera.motion.auto_tracking.restarttime=data`

Example of Response `camera.motion.auto_tracking.restarttime&202 Accepted(camera.status=save)`

Interpretation Change restart time of Auto Tracking in seconds. Specify "off", 10, 20, 30, 40, 50, 60 or 120. If there is no motion, the camera goes to home position after the restart time, and restarts Auto Tracking. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Upper Limit of EZoom from VN-V686

Format `/api/param?camera.motion.zoom.digitallimit`

Example of response `camera.motion.zoom.digitallimit=2&200 OK`

Interpretation Acquire upper limit of EZoom. 1, 2, 4, 8, 16 or 32 will be returned.

Allowed users admin, operator, user

Setting Upper Limit of EZoom for VN-V686

Format `/api/param?camera.motion.zoom.digitallimit=data`

Example of Response `camera.motion.zoom.digitallimit&202 Accepted(camera.status=save)`

Interpretation Change upper limit of EZoom. Specify 1, 2, 4, 8, 16 or 32. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting On/Off of Pan Limit from VN-V686

Format `/api/param?camera.motion.pan.limit.status`

Example of response `camera.motion.pan.limit.status=off&200 OK`

Interpretation Acquire On/Off of Pan Limit. "on" or "off" will be returned.

Allowed users admin, operator, user

Setting On/Off of Pan Limit for VN-V686

Format `/api/param?camera.motion.pan.limit.status=data`

Example of Response `camera.motion.pan.limit.status&202`

`Accepted(camera.status=save)`

Interpretation Change On/Off of Pan Limit. Specify "on" or "off". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Left Side of Pan Limit from VN-V686

Format `/api/param?camera.motion.pan.limit.left`

Example of response `camera.motion.pan.limit.left=90.00&200 OK`

Interpretation Acquire left side of Pan Limit in degrees.

Allowed users admin, operator, user

Setting Left Side of Pan Limit for VN-V686

Format `/api/param?camera.motion.pan.limit.left=present`

Example of Response `camera.motion.pan.limit.left&200 OK`

Interpretation Set current pan position as left side of Pan Limit.

Allowed users admin, operator

Getting Right Side of Pan Limit from VN-V686

Format `/api/param?camera.motion.pan.limit.right`

Example of response `camera.motion.pan.limit.right=90.00&200 OK`

Interpretation Acquire right side of Pan Limit in degrees.

Allowed users admin, operator, user

Setting Right Side of Pan Limit for VN-V686

Format `/api/param?camera.motion.pan.limit.right=present`

Example of Response `camera.motion.pan.limit.right&200 OK`

Interpretation Set current pan position as right side of Pan Limit.

Allowed users admin, operator

Moving to Left/Right Side of Pan Limit for VN-V686

Format `/api/param?camera.motion.pan.status=data`

Example to move ot left side `/api/param?camera.motion.pan.status=goto_leftlimit`

Example of Response `camera.motion.pan.status&200 OK`

Interpretation Move to left/right side of Pan Limit. Specify goto_leftlimit or goto_rightlimit.

Allowed users admin, operator

Getting Tilt Limit from VN-V686

Format `/api/param?camera.motion.tilt.limit.upper`

Example of response `camera.motion.tilt.limit.upper=5&200 OK`

Interpretation Acquire Tilt Limit in degrees.

Allowed users admin, operator, user

Setting Tilt Limit for VN-V686

Format `/api/param?camera.motion.tilt.limit.upper=data`

Example to set horizontal `/api/param?camera.motion.tilt.limit.upper=5`

Example of Response `camera.motion.tilt.limit.upper&202`

`Accepted(camera.status=save)`

Interpretation Set Tilt Limit. Specify from 0 to 15. 5 is horizontal. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Speed of Going to Preset Position from VN-V686

Format `/api/param?camera.motion.position.speed`

Example of response `camera.motion.position.speed=100&200 OK`

Interpretation Acquire speed of going to preset position. Value from 0 to 100 is returned. 100 is fastest. The speed is 4 steps internally. The speed is applied also to preset position of auto patrol.

Allowed users admin, operator, user

Setting Speed of Going to Preset Position for VN-V686

Format `/api/param?camera.motion.position.speed=data`

Example to set horizontal `/api/param?camera.motion.position.speed=100`

Example of Response `camera.motion.position.speed&202`

`Accepted(camera.status=save)`

Interpretation Set speed of going to preset position. Specify from 0 to 100. 5 is horizontal. 100 is fastest. The

speed is 4 steps internally. The speed is applied also to preset position of auto patrol. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Auto Flip Setting from VN-V686

Format `/api/param?camera.motion.tilt.auto_flip`

Example of response `camera.motion.tilt.auto_flip=full_digital&200 OK`

Interpretation Acquire setting of auto flip. off, full_digital, half, full or full_reverse is returned.

off : Auto Flip function does not activate.

full_digital : This is Digital Flip on Web page. The top/bottom and left/right of the image flips when the object has passed the bottom of the camera, at the position of 135 degrees.

half : Thi is Mode1 on Web page. When the camera faces bottom, it rotates 180 degrees horizontally and stops. In this case, the operating direction of the camera is the same as that of the Pan/Tilt lever.

full : This is Mode2 on Web page. When the camera faces bottom, it rotates 180 degrees horizontally and the operating direction of the camera is opposite that of the Tilt lever. Select this mode if you wish to operate continuously. Once operation stops, the direction will return to normal.

full_reverse : This is Mode3 on Web page. When the camera faces bottom, it rotates 180 degrees horizontally and the operating direction of the camera is opposite that of the Tilt lever. However, the operating direction will return to normal 10 seconds after the operation has stopped.

Allowed users admin, operator, user

Setting Auto Flip for VN-V686

Format `/api/param?camera.motion.tilt.auto_flip=data`

Example to set horizontal `/api/param?camera.motion.tilt.auto_flip=full_digital`

Example of Response `camera.motion.tilt.auto_flip&202`

`Accepted(camera.status=save)`

Interpretation Set auto flip mode. Specify off, full_digital, half, full or full_reverse. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

(2) PTZ Control

Getting Pan Position from VN-V686

Format `/api/param?camera.motion.pan`

Example of response `camera.motion.pan=45.00&200 OK`

Interpretation Acquire current pan position in degrees. Value from 0.00 to 359.99 is returned.

Allowed users admin, operator, user

Moving to Specified Pan Position for VN-V686

Format `/api/param?camera.motion.pan=data`

Example to move to absolute 90 degrees `/api/param?camera.motion.pan=90.00`

Example to move to relative 45 degrees `/api/param?camera.motion.pan=+45.00`

Example of Response `camera.motion.pan&200 OK`

Interpretation Move to specified pan position. To move to absolute position, specify from 0.00 to 359.99.

Allowed users admin, operator

Pan Operation for VN-V686

Format `/api/param?camera.motion.pan.status=data`

Example to start pan `/api/param?camera.motion.pan.status=start`

Example of Response `camera.motion.pan.status&200 OK`

Interpretation Start or stop pan operation. Specify start or stop.

Allowed users admin, operator

Setting Direction of Pan Operation for VN-V686

Format `/api/param?camera.motion.pan.mode=data`

Example to set to left `/api/param?camera.motion.pan.mode=left`

Example of Response `camera.motion.pan.mode&200 OK`

Interpretation Set direction of pan operation. Specify left or right.

Allowed users admin, operator

Setting Speed of Pan Operation for VN-V686

Format `/api/param?camera.motion.pan.speed=data`

Example to set maximum speed `/api/param?camera.motion.pan.speed=100`

Example of Response `camera.motion.pan.speed&200 OK`

Interpretation Set speed of pan operation. Specify 0 to 100. The speed is 8 steps internally.

Allowed users admin, operator

Getting Pan Operation Status from VN-V686

Format `/api/param?camera.motion.pan.status`

Example of Response `camera.motion.pan.status=moving&200 OK`

Interpretation Acquire current pan status. "moving" or "stop" is returned.

Allowed users admin, operator, user

Getting Status of Variable Pan/Tilt Speed from VN-V686

Format `/api/param?camera.motion.variable_pantiltspeed.status`

Example of Response `camera.motion.variable_pantiltspeed.status=on&200 OK`

Interpretation Acquire current setting of variable pan/tilt speed. "on" or "off" is returned.

Allowed users admin, operator, user

Setting Status of Variable Pan/Tilt Speed for VN-V686

Format `/api/param?camera.motion.variable_pantiltspeed.status=data`

Example to set on `/api/param?camera.motion.variable_pantiltspeed.status=on`

Example of Response `camera.motion.variable_pantiltspeed.status&202 Accepted(camera.status=save)`

Interpretation Set status of variable pan/tilt speed. Specify on or off. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Tilt Position from VN-V686

Format `/api/param?camera.motion.tilt`

Example of response `camera.motion.tilt=45.00&200 OK`

Interpretation Acquire current tilt position in degrees. Value from 0.00 to 190.00 is returned. 0.00 means -5 degrees and 190.00 means 185.00 degrees. 5.00 and 185.00 are horizontal.

Allowed users admin, operator, user

Moving to Specified Tilt Position for VN-V686

Format `/api/param?camera.motion.tilt=data`

Example to move to horizontal direction `/api/param?camera.motion.tilt=5.00`

Example to move to relative 45 degrees `/api/param?camera.motion.tilt=+45.00`

Example of Response `camera.motion.tilt&200 OK`

Interpretation Move to specified tilt position. To move to absolute position, specify from 0.00 to 190.00. 0.00 means -5 degrees and 190.00 means 185.00 degrees. 5.00 and 185.00 are horizontal.

Allowed users admin, operator

Tilt Operation for VN-V686

Format `/api/param?camera.motion.tilt.status=data`

Example to start pan `/api/param?camera.motion.tilt.status=start`

Example of Response `camera.motion.tilt.status&200 OK`

Interpretation Start or stop tilt operation. Specify start or stop.

Allowed users admin, operator

Setting Direction of Tilt Operation for VN-V686

Format `/api/param?camera.motion.tilt.mode=data`

Example to set to up `/api/param?camera.motion.tilt.mode=up`

Example of Response `camera.motion.tilt.mode&200 OK`

Interpretation Set direction of tilt operation. Specify up or down.

Allowed users admin, operator

Setting Speed of Tilt Operation for VN-V686

Format `/api/param?camera.motion.tilt.speed=data`

Example to set maximum speed `/api/param?camera.motion.tilt.speed=100`

Example of Response `camera.motion.tilt.speed&200 OK`

Interpretation Set speed of tilt operation. Specify 0 to 100. The speed is 8 steps internally.

Allowed users admin, operator

Getting Tilt Operation Status from VN-V686

Format `/api/param?camera.motion.tilt.status`

Example of Response `camera.motion.tilt.status=moving&200 OK`

Interpretation Acquire current tilt status. "moving" or "stop" is returned.

Allowed users admin, operator, user

Getting Zoom Position from VN-V686

Format `/api/param?camera.motion.zoom`

Example of response `camera.motion.zoom=45.00&200 OK`

Interpretation Acquire current zoom position. Value from 0.00 to 99.99 is returned. 0.00 means Wide edge and 99.99 means Tele edge.

Allowed users admin, operator, user

Moving to Specified Zoom Position for VN-V686

Format `/api/param?camera.motion.zoom=data`

Example to move to absolute 50.00 `/api/param?camera.motion.zoom=50.00`

Example to move to relative 5 Tele `/api/param?camera.motion.zoom=+5.00`

Example to move to relative 5 Wide `/api/param?camera.motion.zoom=-5.00`

Example of Response `camera.motion.zoom&200 OK`

Interpretation Move to specified zoom position. To move to absolute position, specify from 0.00 to 99.99. 0.00 means Wide edge and 99.99 means Tele edge.

Allowed users admin, operator

Zoom Operation for VN-V686

Format `/api/param?camera.motion.zoom.status=data`

Example to start zoom `/api/param?camera.motion.zoom.status=start`

Example of Response `camera.motion.zoom.status&200 OK`

Interpretation Start or stop zoom operation. Specify start or stop.

Allowed users admin, operator

Setting Direction of Zoom Operation for VN-V686

Format `/api/param?camera.motion.zoom.mode=data`

Example to set to Tele `/api/param?camera.motion.zoom.mode=in`

Example of Response `camera.motion.zoom.mode&200 OK`

Interpretation Set direction of zoom operation. Specify in or out.

Allowed users admin, operator

Setting Speed of Zoom Operation for VN-V686

Format `/api/param?camera.motion.zoom.speed=data`

Example to set maximum speed `/api/param?camera.motion.zoom.speed=100`

Example of Response `camera.motion.zoom.speed&200 OK`

Interpretation Set speed of zoom operation. Specify 0 to 100. The speed is 4 steps internally.

Allowed users admin, operator

Getting Zoom Operation Status from VN-V686

Format `/api/param?camera.motion.zoom.status`

Example of Response `camera.motion.zoom.status=moving&200 OK`

Interpretation Acquire current zoom status. "moving" or "stop" is returned.

Allowed users admin, operator, user

Getting Focus Position from VN-V686

Format `/api/param?camera.focus`

Example of response `camera.focus=45.00&200 OK`

Interpretation Acquire current focus position. When focus is set to manual, value from 0.00 to 99.99 is returned.

0.00 means Near edge and 99.99 means Far edge. When zoom is Wide edge, focus can be from 0.00 to 99.99. When zoom is Tele edge, focus can be from 0.00 to about 78. When focus is set to auto, easy_auto is returned.

Allowed users admin, operator, user

Moving to Specified Focus Position for VN-V686

Format `/api/param?camera.focus=data`

Example to move to absolute 50.00 `/api/param?camera.focus=50.00`

Example to move to relative 5 Near `/api/param?camera.focus=+5.00`

Example to move to relative 5 Far `/api/param?camera.focus=-5.00`

Example to set to auto `/api/param?camera.focus=easy_auto`

Example to execute one push auto focus `/api/param?camera.focus=op_auto`

Example to change from auto to manual `/api/param?camera.focus=manual`

Example of Response `camera.focus&200 OK`

Interpretation Change focus. To move to absolute position, specify from 0.00 to 99.99. 0.00 means Near edge and 99.99 means Far edge. Specify easy_auto for auto focus. Specify op_auto for one push auto focus. Specify manual for changing from auto to manual. Auto focus works after pan/tilt/zoom operation. Auto focus does not work after moving absolute/relative position of pan/tilt/zoom.

Allowed users admin, operator

Focus Operation for VN-V686

Format `/api/param?camera.focus.status=data`

Example to start zoom `/api/param?camera.focus.status=start`

Example of Response `camera.focus.status&200 OK`

Interpretation Start or stop focus operation. Specify start or stop.

Allowed users admin, operator

Setting Direction of Focus Operation for VN-V686

Format `/api/param?camera.focus.mode=data`

Example to set to Far `/api/param?camera.focus.mode=far`

Example of Response `camera.focus.mode&200 OK`

Interpretation Set direction of focus operation. Specify far or near.

Allowed users admin, operator

Setting Speed of Focus Operation for VN-V686

Format `/api/param?camera.focus.speed=data`

Example to set maximum speed `/api/param?camera.focus.speed=100`

Example of Response `camera.focus.speed&200 OK`

Interpretation Set speed of focus operation. Specify 0 to 100. The speed is 4 steps internally.

Allowed users admin, operator

(3) Preset Position

Getting Current Preset Position from VN-V686

Format `/api/param?camera.status`

Example of response `camera.status=3&200 OK`

Interpretation Acquire current preset position after moving to preset position. "none" is returned after moved from preset position.

Allowed users admin, operator, user

Getting Status of Specified Preset Position from VN-V686

Format `/api/param?camera.position(number).status`

Example of response `camera.position(3).status=unregistered&200 OK`

Interpretation Acquire current status of specified preset position. Specify from 0 to 99 as position number. "unregistered" or "registered" is returned.

Allowed users admin, operator, user

Register Current Position as Preset Position for VN-V686

Format `/api/param?camera.position(number).status=save`

Example of Response `camera.position(3).status&200 OK`

Interpretation Save current position as preset position. Specify from 0 to 99 as position number. Iris, BLC and white balance settings are saved also as preset position data. After moving to preset position, those settings are restored.

Caution: Though Moving to tilt position over 90 degrees is possible when auto flip mode is digital flip, registering tilt position over 90 degrees as preset position is not allowed.

Allowed users admin, operator

Initialize Preset Position for VN-V686

Format `/api/param?camera.position(number).status=initialize`

Example of Response `camera.position(3).status&200 OK`

Interpretation Initialize specified preset position. Specify from 0 to 99 as position number. Position number 0 is home position and it is registered with default settings when initilized. Other positions are unregistered by initializing.

Allowed users admin, operator

Moving to Preset Position for VN-V686

Format `/api/param?camera.position(number).status=goto`

Example of Response `camera.position(3).status&200 OK`

Interpretation Move to specified preset position. Specify from 0 to 99 as position number.

Allowed users admin, operator

Getting Title of Preset Position from VN-V686

Format `/api/param?camera.position(number).comment`

Example of response `camera.position(3).comment=entrance&200 OK`

Interpretation Acquire title of specified preset position. Specify from 0 to 99 as position number.

Allowed users admin, operator, user

Setting Title to Preset Position for VN-V686

Format `/api/param?camera.position(number).comment=data`

Example of Response `camera.position(3).status&200 OK`

Interpretation Set tilte to specified preset position. Specify from 0 to 99 as position number. Maximum characters is 32. To erase title, specify %00, i.e. 0x25 0x30 0x30 in binary data. Use %20 to set space.

Allowed users admin, operator

(4) Auto Pan

Getting Status of Auto Pan from VN-V686

Format `/api/param?camera.motion.auto_pan.status`

Example of response `camera.motion.auto_pan.status=moving&200 OK`

Interpretation Acquire current status of auto pan. "moving" of "stop" is returned.

Allowed users admin, operator, user

Start/Stop of Auto Pan for VN-V686

Format `/api/param?camera.motion.auto_pan.status=data`

Example to start auto pan `/api/param?camera.motion.auto_pan.status=start`

Example to stop auto pan `/api/param?camera.motion.auto_pan.status=stop`

Example to move to start position of auto pan

`/api/param?camera.motion.auto_pan.status=goto_start`

Example to move to end position of auto pan

`/api/param?camera.motion.auto_pan.status=goto_end`

Example of Response `camera.motion.auto_pan.status&200 OK`

Interpretation Start/stop auto pan. Specify start, stop, goto_start or goto_end.

Allowed users admin, operator

Getting Direction of Auto Pan from VN-V686

Format `/api/param?camera.motion.auto_pan.mode`

Example of response `camera.motion.auto_pan.mode=left&200 OK`

Interpretation Acquire direction of auto pan. "left", "right" or "return" is returned.

Allowed users admin, operator, user

Setting Direction of Auto Pan for VN-V686

Format `/api/param?camera.motion.auto_pan.mode=data`

Example to set to Left `/api/param?camera.motion.auto_pan.mode=left`

Example of Response `camera.motion.auto_pan.mode&202 Accepted(camera.status=save)`

Interpretation Set direction of auto pan. Specify "left", "right" or "return". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Speed of Auto Pan from VN-V686

Format `/api/param?camera.motion.auto_pan.speed`

Example of response `camera.motion.auto_pan.speed=50&200 OK`

Interpretation Acquire speed of auto pan. Value from 0 to 100 is returned. The speed is 3 steps internally.

Allowed users admin, operator, user

Setting Speed of Auto Pan for VN-V686

Format `/api/param?camera.motion.auto_pan.speed=data`

Example to set maximum speed `/api/param?camera.motion.auto_pan.speed=100`

Example of Response `camera.motion.auto_pan.speed&202`

`Accepted(camera.status=save)`

Interpretation Set speed of auto pan. Specify 0 to 100. The speed is 3 steps internally. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Setting Current Position as Start Position of Auto Pan for VN-V686

Format `/api/param?camera.motion.auto_pan.start_point=present`

Example of Response `camera.motion.auto_pan.start_point&200 OK`

Interpretation Set current position as start position of auto pan. Pan/tilt/zoom/focus positions are saved. Caution: Though Moving to tilt position over 90 degrees is possible when auto flip mode is digital flip, select tilt position under 90 degrees as start position of auto pan.

Allowed users admin, operator

Setting Current Position as End Position of Auto Pan for VN-V686

Format `/api/param?camera.motion.auto_pan.end_point=present`

Example of Response `camera.motion.auto_pan.end_point&200 OK`

Interpretation Set current position as end position of auto pan.

Allowed users admin, operator

(5) Auto Trace

Getting Status of Auto Trace from VN-V686

Format `/api/param?camera.motion.auto_trace.status`

Example of response `camera.motion.auto_trace.status=moving&200 OK`

Interpretation Acquire current status of auto trace. "moving" of "stop" is returned.

Allowed users admin, operator, user

Start/Stop of Auto Trace for VN-V686

Format `/api/param?camera.motion.auto_trace.status=data`

Example to start auto trace `/api/param?camera.motion.auto_trace.status=start`

Example to stop auto trace `/api/param?camera.motion.auto_trace.status=stop`

Example of Response `camera.motion.auto_trace.status&200 OK`

Interpretation Start/stop auto trace. Specify start or stop. When start is specified during auto trace, auto trace is stopped and restarted.

Allowed users admin, operator

Start/Stop of Auto Trace Recording for VN-V686

Format `/api/param?camera.motion.auto_trace.record.status=data`

Example to start auto trace recording

`/api/param?camera.motion.auto_trace.record.status=start`

Example to stop auto trace recording

`/api/param?camera.motion.auto_trace.record.status=stop`

Example of Response `camera.motion.auto_trace.record.status&200 OK`

Interpretation Start/stop auto trace recording. Specify start or stop. Maximum duration of the recording is 30

seconds, and limited number of commands can be recorded. When the duration or command number is over, error response is returned to pan/tilt/zoom/focus command as below.

206 Partial Content, auto_trace(timeout)

206 Partial Content, auto_trace(memoryfull)

If stop is specified after those limitations, "206 Partial Content" is returned. After the stop commad, normal response is returned to pan/tilt/zoom/focus command.

Caution: Though Moving to tilt position over 90 degrees is possible when auto flip mode is digital flip, that operation is disabled during auto trace recording. Select tilt position under 90 degrees as start position of auto trace recording.

Allowed users admin, operator

Getting Status of Auto Trace Recording from VN-V686

Format `/api/param?camera.motion.auto_trace.record.status`

Example of response `camera.motion.auto_trace.record.status=on&200 OK`

Interpretation Acquire current status of auto trace recording. "on" is returned during the recording.

Allowed users admin, operator, user

6.7. Auto Patrol

The APIs below are related to auto patrol. These are equivalent to the features on the Auto Patrol page of the WEB setting page. Refer to the instruction manual for details on the Auto Patrol page.

Start/Stop of Auto Patrol for VN-V686

Format `/api/param?camera.motion.auto_patrol(number).status=data`

Example to start auto patrol mode 1

`/api/param?camera.motion.auto_patrol(0).status=start`

Example of Response `camera.motion.auto_patrol(0).status&200 OK`

Interpretation Start/stop a mode of auto patrol. Auto patrol mode is from 0 to 2. Specify start or stop.

Caution: When a mode is started, auto patrol mode of Auto Return is changed to the specified mode if auto patrol is registered as Auto Return.

Allowed users admin, operator

Getting Status of Auto Patrol from VN-V686

Format `/api/param?camera.motion.auto_patrol(number).status`

Example of response `camera.motion.auto_patrol(0).status=moving&200 OK`

Interpretation Acquire current status of a mode of auto patrol. Auto patrol mode is from 0 to 2. "moving" or "stop" is returned.

Allowed users admin, operator, user

Getting Preset Postion Number of Auto Patrol from VN-V686

Format `/api/param?camera.motion.auto_patrol(number1).position(number2)`

Example to get preset position number of patrol nuber 3 in mode 1

`/api/param?camera.motion.auto_patrol(0).position(3)`

Example of response `camera.motion.auto_patrol(0).position(3)=5&200 OK`

Interpretation Acquire preset position number of specified patrol number in a mode of auto patrol. Auto patrol mode is from 0 to 2. Patrol number is from 0 to 99. Preset position number from 0 to 99 is returned.

Allowed users admin, operator, user

Setting Preset Postion Number of Auto Patrol for VN-V686

Format `/api/param?camera.motion.auto_patrol(number1).position(number2)=data`

Example of Response `camera.motion.auto_patrol(0).position(3)&202`

`Accepted(camera.motion.auto_patrol.status=save)`

Interpretation Set preset position number of specified patrol number in a mode of auto patrol. Auto patrol mode is from 0 to 2. Patrol number is from 0 to 99. Specify preset position number from 0 to 99. The change is saved by the API, camera.motion.auto_patrol.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Duration of Auto Patrol from VN-V686

Format `/api/param?camera.motion.auto_patrol(number1).position(number2).duration`

Example to get duration of patrol nuber 3 in mode 1

`/api/param?camera.motion.auto_patrol(0).position(3).duration`

Example of response `camera.motion.auto_patrol(0).position(3)=30&200 OK`

Interpretation Acquire duration of specified patrol number in a mode of auto patrol. Auto patrol mode is from 0 to 2. Patrol number is from 0 to 99. 0, 10, 20, 30, 45, 60, or 120 is returned. 0 means skip. 10 means 10 seconds.

Allowed users admin, operator, user

Setting Duarion of Auto Patrol for VN-V686

Format

`/api/param?camera.motion.auto_patrol(number1).position(number2).duration=data`

Example of Response `camera.motion.auto_patrol(0).position(3).duration&202`

`Accepted(camera.motion.auto_patrol.status=save)`

Interpretation Set duration of specified patrol number in a mode of auto patrol. Auto patrol mode is from 0 to 2. Patrol number is from 0 to 99. Specify 0, 10, 20, 30, 45, 60, or 120. 0 means skip. 10 means 10 seconds. The change

is saved by the API, camera.motion.auto_patrol.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Saving Preset Position Number/Duarion of Auto Patrol for VN-V686

Format `/api/param?camera.motion.auto_patrol(number).status=save`

Example of Response `camera.motion.auto_patrol(0).status&202`

`Accepted(camera.motion.auto_patrol.status=save)`

Interpretation Save preset position number and duration of specified mode of auto patrol. Auto patrol mode is from 0 to 2.

Allowed users admin, operator

6.8. Privacy Masking

The APIs below are related to privacy masking. These are equivalent to the features on the Privacy Masking page of the WEB setting page. Refer to the instruction manual for details on the Privacy Masking page.

Getting Whole Status of Privacy Masking from VN-V686

Format `/api/param?camera.private_mask.status`

Example of response `camera.private_mask.status=on&200 OK`

Interpretation Acquire the whole status of privacy masking. "on" or "off" is returned. When this status is off, all privacy masking areas disappear.

Allowed users admin, operator, user

Setting Whole Status of Privacy Masking for VN-V686

Format `/api/param?camera.private_mask.status=data`

Example of Response `camera.private_mask.status&202 Accepted(camera.status=save)`

Interpretation Change the whole status of privacy masking. When this status is off, all privacy masking areas disappear. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Status of a Privacy Masking Area from VN-V686

Format `/api/param?camera.private_mask.status`

Example of response `camera.private_mask.area(number).status=on&200 OK`

Interpretation Acquire each status of privacy masking area. "on" or "off" is returned. Specify from 0 to 7 as area

number.

Allowed users admin, operator, user

Setting Status of a Privacy Masking Area for VN-V686

Format `/api/param?camera.private_mask.area(number).status=data`

Example of Response `camera.private_mask.area(number).status&202 Accepted(camera.status=save)`

Interpretation Change each status of privacy masking area. Specify from 0 to 7 as area number. Specify "on" or "off". The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Privacy Masking Brightness from VN-V686

Format `/api/param?camera.private_mask.color`

Example of response `camera.private_mask.color=ffffff&200 OK`

Interpretation Acquire the brightness of privacy masking. RGB values are returned as hexadecimal number. For exmaple, ffffff is white, 808080 is gray, 000000 is black. The brightness is 11 steps internally.

Allowed users admin, operator, user

Setting Privacy Masking Brightness for VN-V686

Format `/api/param?camera.private_mask.color=data`

Example of Response `camera.private_mask.color&202 Accepted(camera.status=save)`

Interpretation Change the brightness of privacy masking. Specify RGB values by hexadecimal number. For exmaple, ffffff for white, 808080 for gray, 000000 for black.The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Start/Save Editing of Privacy Masking for VN-V686

Format `/api/param?camera.private_mask.area(number).status=data`

Example to start editing `/api/param?camera.private_mask.area(0).status=edit`

Example to save editing `/api/param?camera.private_mask.area(0).status=save`

Example to clear setting `/api/param?camera.private_mask.area(0).status=clear`

Example to quit editing without save
`/api/param?camera.private_mask.area(0).status=exit`

Example of Response `camera.private_mask.area(0).status&200 OK`

Interpretation Start editing of a privacy masking area. Specify from 0 to 7 as area number. Specify "edit", "save",

"clear" or "exit". When editing is started, zoom is changed to Wide edge, and pan/tilt positions are restored if the privacy masking area has settings. Pan/tilt position of the privacy masking area can be changed by pan/tilt APIs.

Allowed users admin, operator

Setting Width of Privacy Masking Area for VN-V686

Format `/api/param?camera.private_mask.width=data`

Example to expand the width 1 step `/api/param?camera.private_mask.width=+`

Example of Response `camera.private_mask.width&200 OK`

Interpretation Change the width of editing privacy masking area. Specify + or -. Before use this API, starting editing is required.

Allowed users admin, operator

Setting Height of Privacy Masking Area for VN-V686

Format `/api/param?camera.private_mask.height=data`

Example to expand the height 1 step `/api/param?camera.private_mask.height=+`

Example of Response `camera.private_mask.height&200 OK`

Interpretation Change the height of editing privacy masking area. Specify + or -. Before use this API, starting editing is required.

Allowed users admin, operator

6.9. Motion Detect

The APIs below are related to motion detection. These are equivalent to the features on the Motion Detection page of the WEB setting page. Refer to the instruction manual for details on the Motion Detection page.

Getting Motion Detect On/Off Status from VN-V686

Format `/api/param?camera.detection.status`

Example of response `camera.detection.status=on&200 OK`

Interpretation Acquire the on/off status of motion detect.

Allowed users admin, operator, user

Setting Motion Detect to On/Off for VN-V686

Format `/api/param?camera.detection.status=data`

Example of Response `camera.detection.status&202 Accepted(camera.status=save)`

Interpretation Change the on/off status of motion detect. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Caution: Motion detect does not work during auto tracking.

Allowed users admin, operator

Getting Motion Detect Sensitivity from VN-V686

Format `/api/param?camera.detection.level`

Example of response `camera.detection.level=20&200 OK`

Interpretation Acquire the motion detect sensitivity. A value between 0 to 100 will be returned. The larger the value, the higher will be the sensitivity.

Allowed users admin, operator, user

Setting Motion Detect Sensitivity for VN-V686

Format `/api/param?camera.detection.level=data`

Example of response `camera.detection.level&202 Accepted(camera.status=save)`

Interpretation Change the motion detect sensitivity. Specify a value between 0 to 100. The larger the value, the higher will be the sensitivity. The sensitivity is 11 steps internally. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

Getting Motion Detect Mask from VN-V686

Format `/api/param?camera.detection.area`

Example of response `camera.detection.area=000102030405060708090001&200 OK`

Interpretation Acquire the mask of motion detect. 24 ASCII characters will be returned.

The screen of VN-V686 is made up of 12 x 8 = 96 blocks, and mask can be set to on/off for each block. This information can be represented in 96 bits = 12-byte hexadecimal. (Response is returned in ASCII character strings. Therefore, 24 characters will be returned.) The bit string will appear as follows when mask is set to off for the top left block only.

10000000 00000000 00000000 ,,,

Storage in bytes will begin from the LSB and represented in a hexadecimal value as shown below.

01 00 00 00 00 00 00 00 00 00

The hexadecimal value denotes the 24 ASCII characters acquired via this API that are expressed in ASCII codes. For example, the following character string will be returned when only the top left and bottom right blocks are masked.

camera.detection.area=010000000000000000000080

Allowed users admin, operator, user

Setting Motion Detect Mask for VN-V686

Format `/api/param?camera.detection.area=data`

Example `/api/param?camera.detection.area=000102030405060708090001`

Example of response `camera.detection.area&202 Accepted(camera.status=save)`

Interpretation Change the motion detect mask. Specify using a 24 ASCII character string. Refer to the item on "Getting Motion Detect Mask from VN-V686" on the interpretation of this character string. To mask all blocks, specify all zeros in the ASCII character string. The change is saved by the API, camera.status=save. If the change is not saved, the setting is restored by reboot.

Allowed users admin, operator

6.10. Network Basics

The APIs below are related to the basics of networks. These are equivalent to the features on the Basic page of the WEB setting page. Refer to the instruction manual for details on the Basic page.

Enabling Network Setting Changes

Format `/api/param?network.interface.status=restart`

Example of Response `network.interface.status&200 OK`

Interpretation Changes of following network parameters become valid by this API.

DHCP, IP Address, Subnet Mask, TTL, MTU, TOS, Negotiation

Changes are not reflected in the actions until this API is used. APIs to get settings of those parameters return previous values until this API is used. When this API is issued, VN-V686 reboots in about 1 minute.

Allowed user admin

Getting DHCP Setting from VN-V686

Format `/api/param?network.interface.dhcp.status`

Example of Response `network.interface.dhcp.status=off&200 OK`

Interpretation Acquire the current DHCP setting.

Allowed users admin, operator, user

Setting DHCP for VN-V686

Format `/api/param?network.interface.dhcp.status=data`

Example `/api/param?network.interface.dhcp.status=on`

Example of Response

`network.interface.dhcp.status&202 Accepted(network.interface.status=restart)`

Interpretation Change the DHCP setting. Specify "on" or "off". To validate the change, use "network.interface.status=restart" API that reboots VN-V686 in about 1 minute.

Allowed user admin

Getting IP Address from VN-V686

Format `/api/param?network.interface.ip`

Example of Response `network.interface.ip=192.168.0.2&200 OK`

Interpretation Acquire the current IP address.

Allowed users admin, operator, user

Setting IP Address for VN-V686

Format `/api/param?network.interface.ip=data`

Example `/api/param?network.interface.ip=192.168.0.2`

Example of Response

`network.interface.ip&202 Accepted(network.interface.status=restart)`

Interpretation Change the IP address. To validate the change, use "network.interface.status=restart" API that reboots VN-V686 in about 1 minute. Set appropriate combination of IP address, subnet mask and default gateway before "network.interface.status=restart".

Allowed user admin

Getting Subnet Mask from VN-V686

Format `/api/param?network.interface.subnetmask`

Example of Response `network.interface.subnetmask=255.255.255.0&200 OK`

Interpretation Acquire the current subnet mask.

Allowed users admin, operator, user

Setting Subnet Mask for VN-V686

Format `/api/param?network.interface.subnetmask=data`

Example `/api/param?network.interface.subnetmask=255.0.0.0`

Example of Response

`network.interface.subnetmask&202 Accepted(network.interface.status=restart)`

Interpretation Change the subnet mask. To validate the change, use "network.interface.status=restart" API that reboots VN-V686 in about 1 minute. Set appropriate combination of IP address, subnet mask and default gateway before "network.interface.status=restart".

Allowed user admin

Getting Default Gateway from VN-V686

Format `/api/param?network.gateway`

Example of Response `network.gateway=192.168.0.254&200 OK`

Interpretation Acquire the current default gateway.

Allowed users admin, operator, user

Setting Default Gateway for VN-V686

Format `/api/param?network.gateway=data`

Example `/api/param?network.gateway=192.168.0.254`

Example of Response `network.gateway&200 OK`

Interpretation Change the default gateway. To set static default gateway, disable DHCP. Default gateway can not be changed when DHCP is enabled. Specify IP address in same segment with VN-V686's IP address. Specify 0.0.0.0 to delete default gateway setting.

Allowed user admin

Getting Host Name from VN-V686

Format `/api/param?network.hostname`

Example of Response `network.hostname=localhost&200 OK`

Interpretation Acquire the current host name.

Allowed users admin, operator, user

Setting Host Name for VN-V686

Format `/api/param?network.hostname=data`

Example `/api/param?network.hostname=somename`

Example of Response `network.hostname&200 OK`

Interpretation Change the host name. Characters that may be used for the host name are alphanumerics, hyphens (-) and period. Maximum size is 63 bytes.

Specify as %00 when the host name setting is to be left blank.

Example when leaving field blank `/api/param?network.hostname=%00`

Allowed user admin

Getting DNS Server On/Off Status from VN-V686

Format `/api/param?network.dns.status`

Example of Response `network.dns.status=off&200 OK`

Interpretation Acquire the on/off status of the DNS server. Either on or off will be returned.

Allowed users admin, operator, user

Setting DNS Server Status to On/Off, or Validate Changes for VN-V686

Format `/api/param?network.dns.status=data`

Example `/api/param?network.dns.status=on`

Example of Response `network.dns.status&200 OK`

Interpretation Change status of DNS server setting, or validate changes to DNS server settings. Specify "on", "off" or "restart". Changes of DNS server settings become valid by "restart".

Allowed users admin, operator

Getting DNS Server IP Address from VN-V686

Format `/api/param?network.dns.ip`

Example of Response `network.dns.ip=10.0.0.150&200 OK`

Interpretation Acquire IP address of DNS server.

Allowed users admin, operator, user

Setting DNS Server IP Address for VN-V686

Format `/api/param?network.dns.ip=data`

Example `/api/param?network.dns.ip=10.0.0.150`

Example of Response

`network.dns.ip&202 Accepted(network.dns.status=restart)`

Interpretation Change IP address of DNS server. To validate the change, use "network.dns.status=restart" API.

Allowed users admin, operator

Getting MAC Address from VN-V686

Format `/api/param?network.interface.mac`

Example of Response `network.interface.mac=008088001AEF&200 OK`

Interpretation Acquire the MAC address. A 12-byte ASCII character string will be returned. There is no API for setting MAC address.

Allowed users admin, operator, user

6.11. Network Details

The APIs below are related to network details. These are equivalent to the features on the Details page of the WEB setting page. Refer to the instruction manual for details on the Details page.

Getting TOS Value of JPEG from VN-V686

Format `/api/param?network.interface.dscp.video.jpeg`

Example of Response `network.interface.dscp.video.jpeg=56&200 OK`

Interpretation Acquire TOS that includes DHCP field for JPEG.

Allowed users admin, operator, user

Setting TOS Value of JPEG for VN-V686

Format `/api/param?network.interface.dscp.video.jpeg=data`

Example `/api/param?network.interface.dscp.video.jpeg=56`

Example of Response

`network.interface.dscp.video.jpeg&202`

`Accepted(network.interface.status=restart)`

Interpretation Change TOS that includes DHCP field for JPEG. The range of set value is between 0 to 255 though MSB 6 bits in the value is valid. To validate the change, use "network.interface.status=restart" API.

Allowed user admin

Getting TOS Value of MPEG-4 from VN-V686

Format `/api/param?network.interface.dscp.video.mpeg`

Example of Response `network.interface.dscp.video.mpeg=56&200 OK`

Interpretation Acquire TOS that includes DHCP field for MPEG-4.

Allowed users admin, operator, user

Setting TOS Value of MPEG-4 for VN-V686

Format `/api/param?network.interface.dscp.video.mpeg=data`

Example `/api/param?network.interface.dscp.video.mpeg=56`

Example of Response

`network.interface.dscp.video.mpeg&202`

`Accepted(network.interface.status=restart)`

Interpretation Change TOS that includes DHCP field for MPEG-4. The range of set value is between 0 to 255 though MSB 6 bits in the value is valid. To validate the change, use "network.interface.status=restart" API.

Allowed user admin

Getting Unicast TTL Value from VN-V686

Format `/api/param?network.interface.ttl.unicast`

Example of Response `network.interface.ttl.unicast=16&200 OK`

Interpretation Acquire TTL of unicast. 1-255 is returned.

Allowed users admin, operator, user

Setting Unicast TTL for VN-V686

Format `/api/param?network.interface.ttl.unicast=data`

Example `/api/param?network.interface.ttl.unicast=56`

Example of Response

```
network.interface.ttl.unicast&202 Accepted(network.interface.status=restart)
```

Interpretation Change TTL of unicast. The range of set value is between 1 to 255. To validate the change, use "network.interface.status=restart" API.

Allowed user admin

Getting Multicast TTL Value from VN-V686

Format `/api/param?network.interface.ttl.multicast`

Example of Response `network.interface.ttl.multicast=16&200 OK`

Interpretation Acquire TTL of multicast. 1-255 is returned.

Allowed users admin, operator, user

Setting Multicast TTL for VN-V686

Format `/api/param?network.interface.ttl.multicast=data`

Example `/api/param?network.interface.ttl.multicast=56`

Example of Response

```
network.interface.ttl.multicast&202
Accepted(network.interface.status=restart)
```

Interpretation Change TTL of multicast. The range of set value is between 1 to 255. To validate the change, use "network.interface.status=restart" API.

Allowed user admin

Getting MTU Value VN-V686

Format `/api/param?network.interface.mtu`

Example of Response `network.interface.mtu=1420&200 OK`

Interpretation Acquire the MTU value.

Allowed users admin, operator, user

Setting MTU Value for VN-V686

Format `/api/param?network.interface.mtu=data`

Example `/api/param?network.interface.mtu=1500`

Example of Response

```
network.interface.mtu&202 Accepted(network.interface.status=restart)
```

Interpretation Change the MTU value. The range of set value is between 1280 to 1500. To validate the change, use "network.interface.status=restart" API.

Allowed user admin

Getting Network Negotiation Setting from VN-V686

Format `/api/param?network.interface.negotiation`

Example of Response `network.interface.negotiation=auto&200 OK`

Interpretation Acquire the network Negotiation setting. Either auto, 100full, 100half, 10full or 10half will be returned.

Allowed users admin, operator, user

Setting Network Negotiation for VN-V686

Format `/api/param?network.interface.negotiation=data`

Example `/api/param?network.interface.negotiation=auto`

Example of Response

`network.interface.negotiation&202 Accepted(network.interface.status=restart)`

Interpretation Change the network Negotiation setting. Specify auto, 100full, 100half, 10full or 10half. To validate the change, use "network.interface.status=restart" API.

Allowed user admin

6.12. Protocol

The APIs below are related to protocol. These are equivalent to the features on the Protocol page of the WEB setting page. Refer to the instruction manual for details on the Protocol page.

Getting Port Number of HTTP from VN-V686

Format `/api/param?network.http.port`

Example of Response `network.http.port=80&200 OK`

Interpretation Acquire port number of HTTP server in VN-V686.

Allowed users admin, operator

Setting Port Number of HTTP for VN-V686

Format `/api/param?network.http.port=data`

Example `/api/param?network.http.port=start`

Example of Response `network.http.port&202`

`Accepted(network.http(configuration).status=restart)`

Interpretation Change port number of HTTP server in VN-V686. Default value is 80. To validate the change, use "network.http(configuration).status=restart" or "network.http.status=restart" API.

Allowed users admin, operator

6.13. Multicast Streaming

The APIs below are related to manual streaming. These are equivalent to the features on the Streaming page of the WEB setting page. Refer to the instruction manual for details on the Streaming page.

Getting Status of JPEG Multicast Streaming from VN-V686

Format `/api/param?network.destination(1).status`

Example of Response `network.destination(1).status=off&200 OK`

Interpretation Acquire status of JPEG multicast streaming. Either on or off will be returned.

Allowed users admin, operator

Setting Status of JPEG Multicast Streaming, or Save Changes for VN-V686

Format `/api/param?network.destination(1).status=data`

Example `/api/param?network.destination(1).status=start`

Example of Response `network.destination(1).status&200 OK`

Interpretation Start/stop JPEG multicast streaming, or save changes to multicast streaming settings. Specify "start", "stop" or "save". Changes of multicast streaming settings become valid by "save".

Multicast stream is RTP compliant.

If power becomes off during multicast streaming, the streaming starts automatically after power on.

Allowed users admin, operator

Getting JPEG Multicast Address from VN-V686

Format `/api/param?network.destination(1).host`

Example of Response `network.destination(1).host=225.0.1.1&200 OK`

Interpretation Acquire JPEG multicast address.

Allowed users admin, operator

Setting JPEG Multicast Address for VN-V686

Format `/api/param?network.destination(1).host=data`

Example `/api/param?network.destination(1).host=225.0.1.1`

Example of Response

`network.destination(1).host&202 Accepted(network.destination(1).host=save)`

Interpretation Change JPEG multicast address. Specify from 224.0.0.0 to 239.255.255.255. To validate the change, use "network.destination(1).host=save" API. After the save, start streaming by

"network.destination(1).host=start" API.

Allowed user admin

Getting JPEG Multicast Port Number from VN-V686

Format `/api/param?network.destination(1).port`

Example of Response `network.destination(1).port=49152&200 OK`

Interpretation Acquire JPEG multicast port number.

Allowed users admin, operator

Setting JPEG Multicast Port Number for VN-V686

Format `/api/param?network.destination(1).port=data`

Example `/api/param?network.destination(1).port=49152`

Example of Response

`network.destination(1).port&202 Accepted(network.destination(1).host=save)`

Interpretation Change JPEG multicast port number. Specify from 2 to 65534. To validate the change, use "network.destination(1).host=save" API. After the save, start streaming by "network.destination(1).host=start" API.

Allowed user admin

Getting Frame Rate of JPEG Multicast from VN-V686

Format `/api/param?network.destination(1).framerate`

Example of Response `network.destination(1).framerate=10&200 OK`

Interpretation Acquire JPEG multicast frame rate.

Allowed users admin, operator

Setting Frame Rate of JPEG Multicast for VN-V686

Format `/api/param?network.destination(1).framerate=data`

Example `/api/param?network.destination(1).framerate=30`

Example of Response

`network.destination(1).framerate&202`

`Accepted(network.destination(1).host=save)`

Interpretation Change JPEG multicast frame rate. Specify 30, 25, 15, 10, 7.5, 6, 5, 3, 2, 1, -2, -3, -5, -10, -15, -20, or -30. -5 means 1/5fps for example. To validate the change, use "network.destination(1).host=save" API. After the save, start streaming by "network.destination(1).host=start" API.

Allowed user admin

Getting Status of MPEG-4 Multicast Streaming from VN-V686

Format `/api/param?network.destination(2).status`

Example of Response `network.destination(2).status=off&200 OK`

Interpretation Acquire status of MPEG-4 multicast streaming. Either on or off will be returned.

Allowed users admin, operator

Setting Status of MPEG-4 Multicast Streaming, or Save Changes for VN-V686

Format `/api/param?network.destination(2).status=data`

Example `/api/param?network.destination(2).status=start`

Example of Response `network.destination(2).status&200 OK`

Interpretation Start/stop MPEG-4 multicast streaming, or save changes to multicast streaming settings. Specify "start", "stop" or "save". Changes of multicast streaming settings become valid by "save".

Multicast stream is RTP compliant. Marker bit of RTP header is 1 when the RTP packet has last data of VOP.

If power becomes off during multicast streaming, the streaming starts automatically after power on.

Allowed users admin, operator

Getting MPEG-4 Multicast Address from VN-V686

Format `/api/param?network.destination(2).host`

Example of Response `network.destination(2).host=225.0.1.2&200 OK`

Interpretation Acquire MPEG-4 multicast address.

Allowed users admin, operator

Setting MPEG-4 Multicast Address for VN-V686

Format `/api/param?network.destination(2).host=data`

Example `/api/param?network.destination(2).host=225.0.1.2`

Example of Response

`network.destination(2).host&202 Accepted(network.destination(2).host=save)`

Interpretation Change MPEG-4 multicast address. Specify from 224.0.0.0 to 239.255.255.255. To validate the change, use "network.destination(2).host=save" API. After the save, start streaming by "network.destination(2).host=start" API.

Allowed user admin

Getting MPEG-4 Multicast Port Number from VN-V686

Format `/api/param?network.destination(2).port`

Example of Response `network.destination(2).port=59152&200 OK`

Interpretation Acquire MPEG-4 multicast port number.

Allowed users admin, operator

Setting MPEG-4 Multicast Port Number for VN-V686

Format `/api/param?network.destination(1).port=data`

Example `/api/param?network.destination(1).port=59152`

Example of Response

`network.destination(1).port&202 Accepted(network.destination(1).host=save)`

Interpretation Change MPEG-4 multicast port number. Specify from 2 to 65534. To validate the change, use "network.destination(2).host=save" API. After the save, start streaming by "network.destination(2).host=start" API.

Allowed user admin

6.14. Access Restrictions

The APIs below are related to access restrictions. These are equivalent to the features on the Access Restrictions page of the WEB setting page. Refer to the instruction manual for details on the Access Restrictions page.

Getting Deny/Allow Setting of Client Restrictions from VN-V686

Format `/api/param?network.access_control(stream_out).logic`

Example of Response `network.access_control(stream_out).logic=deny&200 OK`

Interpretation Acquire the deny/allow setting of client restrictions. Either deny or allow will be returned. These restrictions are applied to getting JPEG.

Allowed users admin, operator

Setting Client Restriction to Deny/Allow for VN-V686

Format `/api/param?network.access_control(stream_out).logic=data`

Example `/api/param?network.access_control(stream_out).logic=deny`

Example of Response `network.access_control(stream_out).logic&200 OK`

Interpretation Change the deny/allow setting of client restrictions. Specify as deny or allow. These restrictions are applied to getting JPEG.

Allowed user admin

Getting IP Address Setting of Restricted Client from VN-V686

Format `/api/param?network.access_control(stream_out).host(Number)`

Example When Getting the first IP address

`/api/param?network.access_control(stream_out).host(1)`

Example of Response `network.access_control(stream_out).host(1)=10.0.0.100&200 OK`

Interpretation Acquire the IP address setting of the restricted client. Setting is possible up to 10 items. Specify a value between 1 to 10 for the number. The following will be returned if subnet mask was specified.

Example of Response 2

```
network.access_control(stream_out).host(1)=10.0.0.0/24&200 OK
```

The above example indicates that the range is between 10.0.0.0 to 10.0.0.255. There are also cases when FQDN instead of IP address is set.

Example of Response 3

```
network.access_control(stream_out).host(1)=somedivision.somecompany.com&200 OK
```

Allowed users admin, operator

Setting IP Address of Restricted Client for VN-V686

Format `/api/param?network.access_control(stream_out).host(Number)=data`

Example When setting the first IP address

```
/api/param?network.access_control(stream_out).host(1)=10.0.0.100
```

Example of Response `network.access_control(stream_out).host(1)&200 OK`

Interpretation Change the IP address setting of client restriction. Setting is possible up to 10 items. Specify a value between 1 to 10 for the number. A range of IP address may be specified if the subnet mask is also specified. For example, set as follows to specify a range between 10.0.0.0 to 10.0.0.255.

Example `/api/param?network.access_control(stream_out).host(1)=10.0.0.0/24`

It is also possible to set using FQDN instead of IP address. Set as follows if the setting is to be left blank.

Example `/api/param?network.access_control(stream_out).host(1)=%00`

Allowed user admin

6.15. Time

The APIs below are related to time. These are equivalent to the features on the Time page of the WEB setting page. Refer to the instruction manual for details on the Time page.

Getting On/Off of SNTP Client from VN-V686

Format `/api/param?network.ntp.status`

Example of Response `network.ntp.status=off&200 OK`

Interpretation Acquire the on/off status of SNTP client. Either on or off will be returned.

Allowed users admin, operator, user

Setting On/Off of SNTP Client, or Validate Changes for VN-V686

Format `/api/param?network.ntp.status=data`

Example `/api/param?network.ntp.status=on`

Example of Response `network.ntp.status&200 OK`

Interpretation Change the on/off status of SNTP client, or validate changes to settings. Specify "on", "off" or "restart". as on or off. IP address of NTP server and access interval are validated by "restart".

Allowed users admin, operator

Getting NTP Server Address from VN-V686

Format `/api/param?network.ntp.host`

Example of Response `network.ntp.host=10.0.0.100&200 OK`

Interpretation Acquire IP address of NTP server. Either the IP address or FQDN will be returned.

Allowed users admin, operator, user

Setting NTP Server Address for VN-V686

Format `/api/param?network.ntp.host=data`

Example `/api/param?network.ntp.host=10.0.0.100`

Example of Response `network.ntp.host&202 Accepted(network.ntp.status=restart)`

Interpretation Change IP address of NTP server. Specify IP address or FQDN. To validate the change, use "network.ntp.status=restart " API.

Allowed users admin, operator

Getting Access Interval to NTP Server from VN-V686

Format `/api/param?network.ntp.interval`

Example of Response `network.ntp.interval=10&200 OK`

Interpretation Acquire the interval for accessing the NTP server. Unit can be gotten by "network.ntp.unit" API.

Allowed users admin, operator, user

Setting Access Interval to NTP Server for VN-V686

Format `/api/param?network.ntp.interval=data`

Example `/api/param?network.ntp.interval=60`

Example of Response

`network.ntp.interval&202 Accepted(network.ntp.status=restart)`

Interpretation Change the interval for accessing the NTP server. Unit can be set by "network.ntp.unit" API. Specify 1-60 when the unit is min/hour, 1-31 when the unit is day. To validate the change, use "network.ntp.status=restart" API.

Allowed users admin, operator

Getting Access Interval Unit of NTP from VN-V686

Format `/api/param?network.ntp.unit`

Example of Response `network.ntp.unit=hour&200 OK`

Interpretation Acquire the unit of interval for accessing the NTP server. "min", "hour" or "day" is returned.

Allowed users admin, operator, user

Setting Access Interval Unit of SNTP for VN-V686

Format `/api/param?network.ntp.unit=data`

Example `/api/param?network.ntp.unit=day`

Example of Response

`network.ntp.unit&202 Accepted(network.ntp.status=restart)`

Interpretation Change the unit of interval for accessing the NTP server. Specify "min", "hour" or "day". To validate the change, use "network.ntp.status=restart" API.

Allowed users admin, operator

Getting Time from VN-V686

Format `/api/param?system.date`

Example of Response `system.date=20050614171537&200 OK`

Interpretation Acquire the time from the built-in clock of VN-V686. Time is arranged in the order of year, month, day, hour, minute and second. Year is denoted in a 4-digit decimal number, and month, day, hour, minute and second are denoted in 2-digit decimal numbers.

Allowed users admin, operator, user

Setting Time for VN-V686

Format `/api/param?system.date=data`

Example `/api/param?system.date=20050614171537`

Example of Response `system.date&200 OK`

Interpretation Change the time of the built-in clock in VN-V686. Specify in the order of year, month, day, hour, minute and second. Specify year in a 4-digit decimal number, and month, day, hour, minute and second in 2-digit decimal numbers.

Allowed user admin

Getting Timezone from VN-V686

Format `/api/param?system.timezone`

Example of Response `system.timezone=Pacific&200 OK`

Interpretation Acquire the timezone from VN-V686. Character strings in the following table will be returned.

Timezone Character String	Description
GMT-12	Timezone that is 12 hours earlier than the Greenwich Mean Time.
GMT-11	Timezone that is 11 hours earlier than the Greenwich Mean Time.
GMT-10	Timezone that is 10 hours earlier than the Greenwich Mean Time.
Hawaii	Same timezone as GMT-10
GMT-9:30	Timezone that is 9 hours and 30 minutes earlier than the Greenwich Mean Time.
GMT-9	Timezone that is 9 hours earlier than the Greenwich Mean Time.
Alaska	Same timezone as GMT-9
GMT-8	Timezone that is 8 hours earlier than the Greenwich Mean Time.
Pacific	(GMT-8:00) US/Pacific Time
GMT-7	Timezone that is 7 hours earlier than the Greenwich Mean Time.
Arizona	Same timezone as GMT-7
Mountain	Same timezone as GMT-7
GMT-6	Timezone that is 6 hour earlier than the Greenwich Mean Time.
Central	Same timezone as GMT-6
GMT-5	Timezone that is 5 hour earlier than the Greenwich Mean Time.
East-Indiana	Same timezone as GMT-5.
Eastern	Same timezone as GMT-5.
GMT-4	Timezone that is 4 hour earlier than the Greenwich Mean Time.
Atlantic	Same timezone as GMT-4.
GMT-3:30	Timezone that is 3 hours and 30 minutes earlier than the Greenwich Mean Time.
GMT-3	Timezone that is 3 hour earlier than the Greenwich Mean Time.
GMT-2	Timezone that is 2 hour earlier than the Greenwich Mean Time.
GMT-1	Timezone that is 1 hour earlier than the Greenwich Mean Time.
UTC	Greenwich Mean Time
London	Same timezone as UTC.
GMT+1	Timezone that is 1 hour later than the Greenwich Mean Time.
Berlin	Same timezone as GMT+1.
Rome	Same timezone as GMT+1.
Madrid	Same timezone as GMT+1.
Paris	Same timezone as GMT+1.
CET	Same timezone as GMT+1.
GMT+2	Timezone that is 2 hours later than the Greenwich Mean Time.
EET	Same timezone as GMT+2
GMT+3	Timezone that is 3 hours later than the Greenwich Mean Time.
GMT+3:30	Timezone that is 3 hours and 30 minutes later than the Greenwich Mean Time.
GMT+4	Timezone that is 4 hours later than the Greenwich Mean Time.
GMT+4:30	Timezone that is 4 hours and 30 minutes later than the Greenwich Mean Time.
GMT+5	Timezone that is 5 hours later than the Greenwich Mean Time.
GMT+5:30	Timezone that is 5 hours and 30 minutes later than the Greenwich Mean Time.
India	Same timezone as GMT+5:30
GMT+5:45	Timezone that is 5 hours and 45 minutes later than the Greenwich Mean Time.
GMT+6	Timezone that is 6 hours later than the Greenwich Mean Time.
GMT+6:30	Timezone that is 6 hours and 30 minutes later than the Greenwich Mean Time.
GMT+7	Timezone that is 7 hours later than the Greenwich Mean Time.
GMT+8	Timezone that is 8 hours later than the Greenwich Mean Time.

GMT+8:45	Timezone that is 8 hours and 45 minutes later than the Greenwich Mean Time.
GMT+9	Timezone that is 9 hours later than the Greenwich Mean Time.
GMT+9:30	Timezone that is 9 hours and 30 minutes later than the Greenwich Mean Time.
Japan	Same timezone as GMT+9.
GMT+10	Timezone that is 10 hours later than the Greenwich Mean Time.
GMT+10:30	Timezone that is 10 hours and 30 minutes later than the Greenwich Mean Time.
GMT+11	Timezone that is 11 hours later than the Greenwich Mean Time.
GMT+11:30	Timezone that is 11 hours and 30 minutes later than the Greenwich Mean Time.
GMT+12	Timezone that is 12 hours later than the Greenwich Mean Time.
GMT+12:45	Timezone that is 12 hours and 45 minutes later than the Greenwich Mean Time.

Allowed users admin, operator, user

Setting Timezone for VN-V686

Format `/api/param?system.timezone=data`

Example `/api/param?system.timezone=Pacific`

Example of Response `system.timezone&202 Accepted(system.status=restart)`

Interpretation Change the timezone of VN-V686. Refer to "Getting Timezone from VN-V686" on the character string to specify. To validate the change, use "system.status=restart" API.

Allowed user admin

6.16. Password

The APIs below are related to passwords. These are equivalent to the features on the Password page of the WEB setting page. Refer to the instruction manual for details on the Password page.

Setting Password for VN-V686

Format `/api/param?system.password.data1=data2`

Example /api/param?system.password.admin=someword

Example of Response system.password.admin&200 OK

Interpretation Change the VN-V686 password. Different passwords may be set for the 3 user name types, namely admin, operator and user. Set a password between 4 to 16 characters.

Example when setting admin password: `/api/param?system.password.admin=word1`

Example when setting operator password: `/api/param?system.password.operator=word2`

Example when setting user password: `/api/param?system.password.user=word3`

There is no API for Getting passwords.

Allowed user admin

6.17. Maintenance

The APIs below are related to maintenance. These are equivalent to the features on the Maintenance page of the WEB setting page. Refer to the instruction manual for details on the Maintenance page.

Initialization

Format `/api/param?system.status=initialize`

Example of Response `system.status&200 OK`

Interpretation Restore all VN-V686 settings to factory defaults. Upon doing so, all transmission services that are in progress will be terminated. Initializing takes a few minutes. Response is returned after initializing. Do not power off during initializing.

Allowed user admin

Firmware Update

Version upgrading is not possible using API. To do so, use the Version Upgrade feature on the Maintenance page of the WEB setting page.

Getting Status of Auto Cleaning from VN-V686

Format `/api/param?camera.motion.pan.auto_cleaning.status`

Example of Response `camera.motion.pan.auto_cleaning.status=off&200 OK`

Interpretation Acquire status of auto cleaning. "on" or "off" is returned.

Allowed users admin, operator, user

Setting Auto Cleaning for VN-V686

Format `/api/param?camera.motion.pan.auto_cleaning.status=data`

Example of Response `camera.motion.pan.auto_cleaning.status&202 Accepted(camera.status=save)`

Interpretation Change status of auto cleaning. Specify on or off. To save the change, use "camera.status=save" API.

Allowed user admin

Getting Time of Auto Cleaning from VN-V686

Format `/api/param?camera.motion.pan.auto_cleaning.time`

Example of Response `camera.motion.pan.auto_cleaning.time=235959&200 OK`

Interpretation Acquire time of auto cleaning. Time is returned in format of hhmmss.

Allowed users admin, operator, user

Setting Time of Auto Cleaning for VN-V686

Format `/api/param?camera.motion.pan.auto_cleaning.time=data`

Example of Response `camera.motion.pan.auto_cleaning.time&202`

`Accepted(camera.status=save)`

Interpretation Change time of auto cleaning. Specify time in format of hhmmss. To save the change, use "camera.status=save" API.

Allowed user admin

6.18. Getting Status

The APIs below are related to status acquisition. These are equivalent to the features on the Operation page of the WEB setting page. Refer to the instruction manual for details on the Operation page.

Getting Sending Status

Format `/api/param?system.session`

Response Return the total transmission bit rate, and status of each sending operation. Transmission is not carried out in the following examples.

```
system.session=&200 OK
system.session.total_bitrate=0k&200 OK
system.session.sending_count=0&200 OK
system.session.sending_max=20&200 OK
```

In the examples below, 1 JPEG stream of TCP is being sent.

```
system.session=&200 OK
system.session.total_bitrate=388k&200 OK
system.session.sending_count=2&200 OK
system.session.sending_max=5&200 OK
system.session.sending(01).bitrate=326k&200 OK
system.session.sending(01).to.ip=10.0.0.100&200 OK
system.session.sending(01).to.port=1536&200 OK
system.session.sending(01).to.protocol=tcp_passive&200 OK
system.session.sending(01).to.session=http&200 OK
system.session.sending(01).from.encode=jpeg&200 OK
system.session.sending(01).from.framerate=1&200 OK
system.session.sending(01).from.framesize=vga&200 OK
```

In case of MPEG-4, system.session.sending(01).from.encode=mpeg4 is returned. In case of multicast, system.session.sending(01).to.ip becomes multicast IP address.

Interpretation Acquire the sending status of VN-V686. Starting and stopping stream can be occurred in random order, so it can happen that sending(01) is vacant though sending(02) has information.

Allowed users admin, operator, user

Getting Log

Format `/api/param?system.log`

Response Return the following information. These information will be initialized upon turning off the power of VN-V686.

Number of seconds after startup, Alarm input, Motion detect, Error

Response examples

```
system.log=&200 OK
system alive time: 2142sec <----- No. of seconds after startup
Dec 19 14:35:32 vn-v25 user.info evman: Motion Detect <----- Motion detect
Dec 19 14:36:03 vn-v25 user.info evman: Alarm Detect (m1) <----- Alarm input 1ch (make)
Dec 19 14:36:04 vn-v25 user.info evman: Alarm Detect (b2) <----- Alarm input 2ch (break)
Dec 19 14:35:18 vn-v25 user.info evman: Motion Detect <----- Motion detect
```

Interpretation Acquire the VN-V686 log. Maximum size is 10KB.

Allowed user admin

6.19. Getting Settings

The APIs below are related to the acquisition of settings. These are equivalent to the features on the Settings page of the WEB setting page. Refer to the instruction manual for details on the Settings page.

Getting Model Name

Format `/api/param?system.model`

Example of Response `system.model=VN-V686U&200 OK`

Interpretation Acquire the model name.

Allowed users admin, operator, user

Getting Firmware Revisions of Streaming Manager

Format `/api/param?system.software.revision(net)`

Example of Response `system.software.revision(net)=V1-00&200 OK`

Interpretation Acquire firmware revisions of streaming manager.

Allowed users admin, operator, user

Getting Firmware Revisions of PTZ Controller

Format `/api/param?system.software.revision(sys)`

Example of Response `system.software.revision(sys)=V1-00&200 OK`

Interpretation Acquire firmware revisions of ptz controller.

Allowed users admin, operator, user

Getting Firmware Revisions of Image Processor

Format `/api/param?system.software.revision(cam)`

Example of Response `system.software.revision(cam)=V1-00&200 OK`

Interpretation Acquire firmware revisions of image processor.

Allowed users admin, operator, user

Getting Firmware Revisions of Lens

Format `/api/param?system.software.revision(lens)`

Example of Response `system.software.revision(lens)=V1-00&200 OK`

Interpretation Acquire firmware revisions of lens.

Allowed users admin, operator, user

6.20. Others

These are APIs of features not found on the WEB setting page.

Restart VN-V686

Format `/api/param?system.status=restart`

Example of Response `system.status&200 OK`

Interpretation Restarts VN-V686.

Allowed users admin

Getting Alarm Input Status from VN-V686

Format `/api/param?peripheral.input_pin.pin(Number).status`

Example of Response `peripheral.input_pin.pin(1).status=make&200 OK`

Interpretation Acquire the current alarm input status. Specify 1 or 2 to Number. Either make or break will be returned.

Allowed users admin, operator, user

Getting Mode of FTP Server from VN-V686

Format `/api/param?application.ftp.mode`

Example of Response `application.ftp.mode=active&200 OK`

Interpretation Acquire the mode of FTP server that is used by alarm action. Either active or passive is returned.

active mode: Standard mode of FTP server. Also called PORT mode. TCP connection for data is established from 20 port of FTP server to 10020 port of VN-V686.

passive mode: TCP connection for data is established from VN-V686 to FTP server. Port number depends on FTP server.

Allowed users admin, operator, user

Setting Mode of FTP Server for VN-V686

Format `/api/param?application.ftp.mode=data`

Example /api/param?application.ftp.mode=active

Example of Response application.ftp.mode&200 OK

Interpretation Change the mode of FTP server that is used by alarm action. Set active or passive. Default is active.

active mode: Standard mode of FTP server. Also called PORT mode. TCP connection for data is established from 20 port of FTP server to 10020 port of VN-V686.

passive mode: TCP connection for data is established from VN-V686 to FTP server. Port number depends on FTP server.

Allowed user admin, operator

Getting Control Port Number of FTP Server from VN-V686

Format `/api/param?application.ftp.port`

Example of Response `application.ftp.port=21&200 OK`

Interpretation Acquire port number for control of FTP server that is used by alarm action. Port number for data plus one is the port number for control.

Allowed users admin, operator, user

Setting Control Port Number of FTP Server for VN-V686

Format `/api/param?application.ftp.port=data`

Example `/api/param?application.ftp.port=21`

Example of Response application.ftp.port&200 OK

Interpretation Change port number for control of FTP server that is used by alarm action. Default is 21. Port number for data plus one is the port number for control.

Allowed user admin, operator

7. List of Protocols and Port Numbers Used with VN-V686

VN-V686 uses the following protocols and port numbers.

Protocol / Port Number	Use
TCP 80	WEB setting page, API for Getting status and changing settings, acquisition of JPEG from VN-V686 by client
UDP 80	Search for VN-V686
TCP 20, 21	FTP
TCP 25	SMTP (Mail by Alarm Action)
TCP 110	POP (Mail by Alarm Action)
UDP 123	SNTP
TCP 10020, 10021, 10023	reserved for internal use
TCP User Setting	Alarm on TCP
UDP User Setting	Alarm on UDP
UDP User Setting	Multicast Streaming

8. Customizing VN-V686's Built-in Viewer

The built-in JPEG/MPEG-4 viewer of VN-V686 consists of an ActiveX control. The ActiveX is available for customized viewer.

8.1. Properties of ActiveX

- RcvMode 0 for TCP, 1 for multicast
- IP IP Address of VN-V686 in case of TCP
- HttpPort Port Number of VN-V686 in case of TCP
- MultiIP IP Address of multicast
- MultiPort Port Number of multicast
- DispWidth Width of Display
- DispHeight Height of Display
- FrameRate Frame Rate of JPEG (MPEG-4 viewer does not have this property.)
  Specify 30, 25, 15, 10, 7.5, 6, 5, 3, 2, 1, -2, -3, -5, -10, -15, -20, or -30. -5 means 1/5fps for example.
- DispTitle Set 1 to display Camera ID
- DispPosTitle Set 1 to display position title (JPEG viewer only. Operator password is required for displaying position title.)
- DispTimeCode Set 1 to display Time

- TimeFormat Set from 0 to 6 to select time format

0: YYYY/MM/DD HH:MM:SS.mm

1: YYYY/MM/DD HH:MM:SS

2: DD/MM/YYYY HH:MM:SS

3: MM/DD/YYYY HH:MM:SS

4: MM/DD HH:MM:SS

5: HH:MM:SS

6: HH:MM

- DispMotion Set 1 to display motion detect (MPEG-4 viewer does not have this property.)

- FolderName Folder name to save JPEG. The folder is created under MyDocuments. (MPEG-4 viewer does not have this property.)

- OpPassword Operator password required to display position title

8.2. Methods of ActiveX

- Play Start playback

- Stop Stop playback

- Capture Save JPEG (MPEG-4 viewer does not have this method.)

- SetStill Pause playback

8.3. HTML Example for JPEG viewer

(1) Getting 15fps JPEG at display size QVGA

Execute Play method after setting properties below.

```
<OBJECT ID="JPEGViewer"
    WIDTH = 320
    HEIGHT= 240
    CLASSID="CLSID:85D1C139-BE64-430E-955E-EE4939EA4520"
    CODEBASE="./v686j.cab#version=1,0,1,0">
    <PARAM NAME="IP"          VALUE="192.168.0.2">
    <PARAM NAME="HttpPort"       VALUE="80">
    <PARAM NAME="DispWidth"   VALUE="320">
    <PARAM NAME="DispHeight"  VALUE="240">
    <PARAM NAME="FrameRate"   VALUE="15">
</OBJECT>
```

(2) Getting Multicast

Execute Play method after setting properties below.

```
<OBJECT ID="JPEGViewer"
    WIDTH = 640
    HEIGHT= 480
    CLASSID="CLSID:85D1C139-BE64-430E-955E-EE4939EA4520"
    CODEBASE="./v686j.cab#version=1,0,1,0">
    <PARAM NAME="MultiIP"          VALUE="225.0.1.1">
    <PARAM NAME="MultiPort"        VALUE="49152">
    <PARAM NAME="DispWidth"        VALUE="640">
    <PARAM NAME="DispHeight"       VALUE="480">
    <PARAM NAME="RcvMode"   VALUE="1">
</OBJECT>
```

(3) HTML Sample

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML4.0 Transitional//EN">
<HTML><HEAD>
<META http-equiv="Content-Type" content="text/html;charset=ISO-8859-1">
<TITLE></TITLE>
</HEAD>
<SCRIPT LANGUAGE=JAVASCRIPT>
function stop_click() {
    JPEGViewer.Stop();
}
function play_click() {
    JPEGViewer.Play();
}
function still_click(obj)
{
    if(obj.value==" Play "){
        obj.value="Pause";
        JPEGViewer.SetStill(0);
    }else{
        obj.value=" Play ";
        JPEGViewer.SetStill(1);
    }
```

```
}
</SCRIPT>
<BODY STYLE="font-family:sans-serif;" onBeforeUnload="stop_click()" onload="play_click()">
<font size="6"> SAMPLE TEXT </font><br>
<OBJECT ID="JPEGViewer"
    WIDTH = 641
    HEIGHT= 481
    CLASSID="CLSID:85D1C139-BE64-430E-955E-EE4939EA4520"
    STYLE="border-style:solid;border:1px;border-color:#ffffff;">
    <PARAM NAME="IP"     VALUE="192.168.0.2">
    <PARAM NAME="HttpPort"   VALUE="80">
     <PARAM NAME="DispWidth"  VALUE="640">
     <PARAM NAME="DispHeight"  VALUE="480">
</OBJECT>
<form name="myForm">
<table><tr><td>
<INPUT TYPE="BUTTON" NAME="still_btn" VALUE="Pause"  onclick="still_click(this)"></td><td>
</tr></table>
</form></BODY></HTML>
```

(4) Seamless Switching

Sample code of VisualBasic for switching to 192.168.0.200. Sleep over one frame is required between methods.

```
VNviewcnt1.Stop
Sleep 100
VNviewcnt1.IP = "192.168.0.200"
Sleep 100
VNviewcnt1.Play
```

8.4. HTML Example for MPEG-4 viewer

(1) Getting MPEG-4 at display size QVGA

Execute Play method after setting properties below.

```
<OBJECT ID="MPEG4Viewer"
    WIDTH = 320
```

```
    HEIGHT= 240
    CLASSID="CLSID:062774CF-C5DB-4683-909F-9B1AB013CF35"
    CODEBASE="./v686m.cab#version=1,0,1,0">
    <PARAM NAME="IP"          VALUE="192.168.0.2">
    <PARAM NAME="HttpPort"       VALUE="80">
    <PARAM NAME="DispWidth"   VALUE="320">
    <PARAM NAME="DispHeight"  VALUE="240">
    <PARAM NAME="FrameRate"   VALUE="15">
</OBJECT>
```

(2) Getting Multicast

Execute Play method after setting properties below.

```
<OBJECT ID="JPEGViewer"
    WIDTH = 640
    HEIGHT= 480
    CLASSID="CLSID:062774CF-C5DB-4683-909F-9B1AB013CF35"
    CODEBASE="./v686m.cab#version=1,0,1,0">
    <PARAM NAME="MultiIP"          VALUE="225.0.2.1">
    <PARAM NAME="MultiPort"       VALUE="59152">
    <PARAM NAME="DispWidth"       VALUE="640">
    <PARAM NAME="DispHeight"      VALUE="480">
    <PARAM NAME="RcvMode"   VALUE="1">
</OBJECT>
```

(3) HTML Sample

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML4.0 Transitional//EN">
<HTML><HEAD>
<META http-equiv="Content-Type" content="text/html;charset=ISO-8859-1">
<TITLE></TITLE>
</HEAD>
<SCRIPT LANGUAGE=JAVASCRIPT>
function stop_click() {
    MPEG4Viewer.Stop();
}
function play_click() {
```

```
        MPEG4Viewer.Play();
}
function still_click(obj)
{
        if(obj.value==" Play "){
                obj.value="Pause";
                MPEG4Viewer.SetStill(0);
        }else{
                obj.value=" Play ";
                MPEG4Viewer.SetStill(1);
        }
}
</SCRIPT>
<BODY STYLE="font-family:sans-serif;" onBeforeUnload="stop_click()" onload="play_click()">
<font size="6"> SAMPLE TEXT </font><br>
<OBJECT ID= MPEG4Viewer"
        WIDTH = 641
        HEIGHT= 481
        CLASSID="CLSID:062774CF-C5DB-4683-909F-9B1AB013CF35"
        STYLE="border-style:solid;border:1px;border-color:#ffffff;">
        <PARAM NAME="IP"     VALUE="192.168.0.2">
        <PARAM NAME="HttpPort"   VALUE="80">
         <PARAM NAME="DispWidth"  VALUE="640">
         <PARAM NAME="DispHeight"  VALUE="480">
</OBJECT>
<form name="myForm">
<table><tr><td>
<INPUT TYPE="BUTTON" NAME="still_btn" VALUE="Pause"  onclick="still_click(this)"></td><td>
</tr></table>
</form></BODY></HTML>
```

8.5. Notes

- Enable the JPEG/MPEG-4 frame size that you want in Encoding page of VN-V686.

- Start Multicast stream on VN-V686 Web page to use Multicast. The ActiveX does not send request to VN-V686 for starting Multicast stream.

- Set unique Multicast address and port to each Multicast stream if multiple multicast streams are required.

9. FAQ

(1) Low Frame rate due to long delay of network

- Causes of Low Frame Rate

During transmission via TCP, VN-V686 sends out the following data by receiving the Ack of TCP. When network delay is long, reception of Ack will be delayed and sending rate will drop. This therefore leads to a drop in the frame rate.

- Countermeasure

This problem can be avoided by receiving via multicast. Multicast uses UDP and Ack does not exist. As such, the sender will be able to continue sending without being affected by network delays.